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Case Narrative

CASE NARRATIVE
for
MWH LABORATORIES
MWH PROJECT: 99-22205/169683
TRONOX HENDERSON SITE
SDG: 158438

April 20, 2006

Laboratory Identification:

General Engineering Laboratories, LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt The samples arrived at General Engineering Laboratories, LLC, Charleston, South Carolina on March 17, 2006 for analysis. Shipping container temperatures were checked, documented, and within specifications. On the Chain of Custody, sample 158438002 had no time of collection and the client sample ID was written incorrectly. Please refer to the attached e-mail. The sampler did not sign the chain of custody as relinquished. The client was notified. Please refer to the enclosed e-mail. All sample containers arrived without any visible signs of tampering or breakage.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
158438001	2603150303 M116-0.5
158438002	2603150304 M116-0.5D
158438003	2603150305 M116-5
158438004	2603150307 M117-0.5
158438005	2603150308 M117-5

Case Narrative

Sample analyses were conducted using methodology as outlined in General Engineering Laboratories (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Radiochemistry.

This data package, to the best of my knowledge, is in compliance with technical and administrative requirements.

Edith M. Kent

Edith Kent

Project Manager

Chain of Custody and Supporting Documentation

MWH Laboratories
A Division of MWH Americas,Inc.
750 Royal Oaks Drive Suite 100
Monrovia, CA 91016-3629
Ph (626) 386-1100 Fax (626) 386-1095

Date 03/16/06

Submittal Form & Purchase Order 99-22205

***REPORTING REQUIREMENTS:** *Do Not Combine Report with any other samples submitted under different MWH project numbers!*
Report & Invoice must have the MWH Project Number **169683** Sub PO# **99-22205** and Job # **Find Out**

Report all quality control data according to Method. Include dates analyzed, date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature. See reverse side for List of Terms and Conditions

Ship To **Edie Kent**
General Engineering Laboratories, LLC

2040 Savage Road
Charleston, SC 29414

(843) 556-8171 X4433 Fax (843) 766-1178

Reports: Julie Lee Sub-contracting Administrator
EMAIL TO: Julie.Lee@mwhglobal.com
MWH Laboratories 750 Royal Oaks Dr. Ste. 100, Monrovia, CA 91016
Phone (626) 386-1136 Fax (626) 386-1095
Invoices to: MWH LABORATORIES
Accounts Payable PO BOX 6610, Broomfield, CO 80021

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix

CA ELAP OK

MWH Project #	Report Due:	Sub PO#
169683	03/31/06	99-22205

JDL

158438%

Use MWH Lab # for ID

		Client Sample ID for reference only		Analysis Requested	Sample Date & Time	Matrix	Container
1	custsub	**2603150303**	M116-0.5	RADIUM 226	03/11/06 11:55	soil	8oz glass jars
2				RADIUM 228			
3				LEAD 210			
4				LEAD212			
5				THORIUM (ISOTOPIC)			
6				URANIUM (ISOTOPIC)			
7				URANIUM (TOTAL)			
8	custsub	**2603150304**	M11600.5D	RADIUM 226	03/11/06	soil	8oz glass jars
9				RADIUM 228			
10				LEAD 210			
11				LEAD212			
12				THORIUM (ISOTOPIC)			
13				URANIUM (ISOTOPIC)			
14				URANIUM (TOTAL)			

field QC

Relinquished by: _____ Sample Control Date 03/16/06 Time 1457 MUST HAVE NOTIFICAION IF TEMP IS GREATER THAN 6 OR LESS THAN 2 CELSIUS

Received by: C Hause Date 3/17/6 Time 9:20

An Acknowledgement of Receipt is requested to attn: Julie Lee

MWH Project 169683 Sub PO# 99-22205 Montgomery Watson Laboratories page 2

Use MWH LAB#

Row		*Client Sample ID for reference only*	Analysis Requested	Sample Date & Time	Matrix	Container
15	custsub	**2603150305** M116-5	RADIUM 226	03/11/06 12:05	soil	8oz glass jars (2) Lab QC
16			RADIUM 228			
17			LEAD 210			
18			LEAD212			
19			THORIUM (ISOTOPIC)			
20			URANIUM (ISOTOPIC)			
21			URANIUM (TOTAL)			
22	custsub	**2603150307** M117-0.5	RADIUM 226	03/11/06 7:38	soil	8oz glass jars (2)
23			RADIUM 228			
24			LEAD 210			
25			LEAD212			
26			THORIUM (ISOTOPIC)			
27			URANIUM (ISOTOPIC)			
28			URANIUM (TOTAL)			
29	custsub	**2603150308** M117-5	RADIUM 226	03/11/06 7:48	soil	8oz glass jars (2)
30			RADIUM 228			
31			LEAD 210			
32			LEAD212			
33			THORIUM (ISOTOPIC)			
34			URANIUM (ISOTOPIC)			
35			URANIUM (TOTAL)			

Relinquished by: _____ Sample Control Date 03/16/06 Time 1451 MUST HAVE NOTIFICAION IF TEMP IS GREATER THAN 6 OR LESS THAN 2 CELSIUS

Page 2

Received by: _____ Date 3/17/06 Time 9:20 An Acknowledgement of Receipt is requested to attn: Julie Lee

SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: MWH Lab	SDG/ARCOC/Work Order: 169683
Date Received: 3.17.06	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: CR	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.	✓			Circle Coolant # ice bags (blue ice) dry ice none other describe) 5°
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?	✓			Sample ID's, containers affected and observed pH:
6	VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
7	Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			✓	
8	Samples received within holding time?	✓			Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?			✓	Sample ID's affected: See sheet
11	Number of containers received match number indicated on COC?			✓	Sample ID's affected: See sheet
12	COC form is properly signed in relinquished/received sections?	✓			
14	Air Bill ,Tracking #'s, & Additional Comments	8912 3665 2950			

	Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A	Radiological Classification?	✓			Maximum Counts Observed*: 30cpm
B	PCB Regulated?	✓			Comments:
C	Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	✓			Hazard Class Shipped: UN#:

PM (or PMA) review of Hazard classification: _____ Initials 3/17/06 Date:

SAMPLE RECEIPT & REVIEW FORM
CONTINUATION FORM

no date & time on TR-9A (S)

Received 2 samples M119-50
2 samples M116-5
2 samples M117-0.5
2 samples M-117-5

Extra(1) 802 glass JAR

Subject: Re: Sample ID on Chain for Project 169683
From: Linda Geddes <Linda.Geddes@us.mwhglobal.com>
Date: Fri, 17 Mar 2006 12:36:50 -0800
To: Edie Kent <emk@gel.com>
CC: benjamin Jenkins <ben01079@gel.com>

Yes, it should be M116-0.5D

Linda Geddes
Project Manager
MWH Laboratories
750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016
(626) 386-1163

Edie Kent <emk@gel.com>

03/17/2006 12:25 PM

To Linda Geddes <Linda.Geddes@us.mwhglobal.com>
cc benjamin Jenkins <ben01079@gel.com>
Subject Sample ID on Chain for Project 169683

Linda:
For sample 2603150304, the client sample ID on the chain is M11600.5D.
Should it really be M116-0.5D?

Edie

--
Edith M. Kent
Project Manager
General Engineering Laboratories, LLC
2040 Savage Road
PO Box 30712
Charleston, SC 29407
Phone: 843-556-8171, ext. 4453
Fax: 843-766-1178
e-mail: emk@gel.com
web-site: www.gel.com

Subject: Samples Received Today - Condition on Receipt
From: Edie Kent <emk@gel.com>
Date: Fri, 17 Mar 2006 15:17:35 -0500
To: Linda Geddes <Linda.Geddes@us.mwhglobal.com>
CC: benjamin Jenkins <ben01079@gel.com>

Linda:
There was no date and time of collection on the sample containers for TR-9A, project # 169653. We will use the date and time on the chain of custody.

The sampler did not sign the chains as relinquished.
Ben will be sending you the chains the beginning of next week after he has done the login review.

Edie

--
Edith M. Kent
Project Manager
General Engineering Laboratories, LLC
2040 Savage Road
PO Box 30712
Charleston, SC 29407
Phone: 843-556-8171, ext. 4453
Fax: 843-766-1178
e-mail: emk@gel.com
web-site: www.gel.com

RADIOLOGICAL ANALYSIS

Radiochemistry Case Narrative
MWH Laboratories (MWHL)
Work Order 158438

Method/Analysis Information

Product:	**Alphaspec Th, Solid**
Analytical Method:	DOE EML HASL-300, Th-01-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	517153
Prep Batch Number:	513177
Dry Soil Prep GL-RAD-A-021 Batch Number:	513174

Sample ID	Client ID
158438001	2603150303 M116-0.5
158438002	2603150304 M116-0.5D
158438003	2603150305 M116-5
158438004	2603150307 M117-0.5
158438005	2603150308 M117-5
1201062927	Method Blank (MB)
1201062928	158269001(2603140361 M121-0.5) Sample Duplicate (DUP)
1201062929	158269001(2603140361 M121-0.5) Matrix Spike (MS)
1201062930	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-038 REV# 9.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158269001 (2603140361 M121-0.5).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
Samples 1201062930 (LCS) and 158438004 (2603150307 M117-0.5) were recounted due to poor resolution.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Additional Comments
The Th-230 blank result is greater than the MDA, but less than the detection limit. The sample and duplicate, 1201062928 (2603140361 M121-0.5), do not meet the relative percent difference requirements for Th-228, Th-230, and Th-232; however they do meet the relative error ratio requirements with the values of 2.31 for Th-228, 2.01 for Th-230, and 1.71 for Th-232.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**Alphaspec U, Solid**
Analytical Method:	DOE EML HASL-300, U-02-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	517155
Prep Batch Number:	513177
Dry Soil Prep GL-RAD-A-021 Batch Number:	513174

Sample ID	Client ID
158438001	2603150303 M116-0.5
158438002	2603150304 M116-0.5D
158438003	2603150305 M116-5
158438004	2603150307 M117-0.5
158438005	2603150308 M117-5
1201062931	Method Blank (MB)
1201062932	158269001(2603140361 M121-0.5) Sample Duplicate (DUP)
1201062933	158269001(2603140361 M121-0.5) Matrix Spike (MS)
1201062934	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158269001 (2603140361 M121-0.5).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Additional Comments
Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**Gamma, (Pb-212,Ra-226,Ra-228)**
Analytical Method:	EML HASL 300, 4.5.2.3
Prep Method:	Dry Soil Prep
Analytical Batch Number:	513807
Prep Batch Number:	513174

Sample ID	Client ID
158438001	2603150303 M116-0.5
158438002	2603150304 M116-0.5D
158438003	2603150305 M116-5
158438004	2603150307 M117-0.5
158438005	2603150308 M117-5
1201055620	Method Blank (MB)
1201055621	158438003(2603150305 M116-5) Sample Duplicate (DUP)
1201055622	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 10.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158438003 (2603150305 M116-5).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Additional Comments
Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**GFPC, Pb210, Solid**
Analytical Method:	DOE RP280 Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	517518
Prep Batch Number:	513177
Dry Soil Prep GL-RAD-A-021 Batch Number:	513174

Sample ID	Client ID
158438001	2603150303 M116-0.5
158438002	2603150304 M116-0.5D
158438003	2603150305 M116-5
158438004	2603150307 M117-0.5
158438005	2603150308 M117-5
1201063770	Method Blank (MB)
1201063771	158438003(2603150305 M116-5) Sample Duplicate (DUP)
1201063772	158438003(2603150305 M116-5) Matrix Spike (MS)
1201063773	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-018 REV# 5.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158438003 (2603150305 M116-5).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Additional Comments
Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**KPA, Total U, Solid**
Analytical Method:	ASTM D 5174
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	521637
Prep Batch Number:	513177
Dry Soil Prep GL-RAD-A-021 Batch Number:	513174

Sample ID	Client ID
158438001	2603150303 M116-0.5
158438002	2603150304 M116-0.5D
158438003	2603150305 M116-5
158438004	2603150307 M117-0.5
158438005	2603150308 M117-5
1201073174	Method Blank (MB)
1201073175	158269001(2603140361 M121-0.5) Sample Duplicate (DUP)
1201073176	158269001(2603140361 M121-0.5) Matrix Spike (MS)
1201073177	Laboratory Control Sample (LCS)
1201073178	Laboratory Control Sample Duplicate (LCSD)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-023 REV# 11.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. The calibration for Total Uranium is performed prior to each analysis and is located in the raw data section.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158269001 (2603140361 M121-0.5).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
The following samples, 1201073175 (2603140361 M121-0.5), 1201073176 (2603140361 M121-0.5), 158438001 (2603150303 M116-0.5), 158438002 (2603150304 M116-0.5D) and 158438005 (2603150308 M117-5), failed lifetime, were reanalyzed and failed lifetime on the reanalysis. The samples were diluted 1:1 and reanalyzed. The reanalysis passed lifetime. The samples were then reanalyzed again to verify the results greater than the RDL. The results from the dilution are reported. The following samples, 158438001 (2603150303 M116-0.5), 158438002 (2603150304 M116-0.5D), 158438003 (2603150305 M116-5), 158438004 (2603150307 M117-0.5) and 158438005 (2603150308 M117-5), were greater than the RDL. The samples were reanalyzed and verified.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Additional Comments
Additional comments were not required for this sample set.

Qualifier information

Manual qualifiers were not required.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer/Date: 4/21/06

SAMPLE DATA SUMMARY

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report
for

MWHL002 MWH Laboratories

Client SDG: 158438 GEL Work Order: 158438

The Qualifiers in this report are defined as follows:

* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
< Result is less than amount reported.
> Result is greater than amount reported.
B Target analyte was detected in the sample as well as the associated blank.
BD Results below the MDC or low tracer recovery.
D Sample has been diluted and reanalyzed after initially exceeding inst. calibration range
E Concentration of the target analyte exceeds the instrument calibration range.
H Analytical holding time exceeded.
J Indicates an estimated value.
P The response between the confirmation and the primary columns is >40% Different.
R Sample results are rejected.
U Target analyte was analyzed for but not detected above the MDL, MDA, or LOD.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
Z Paint Filter qualifier: Particulates passed through the filter. No free liquids were observed.
d The 2:1 depletion requirement was not met for this sample
h Sample preparation or preservation holding time exceeded.
ND The analyte concentration is not detected above the reporting limit.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.
** Indicates the analyte is a surrogate compound.
This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Edith Kent.

Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 − (843) 556−8171 − www.gel.com

Certificate of Analysis

Company : MWH Laboratories
Address : 750 Royal Oaks Drive, Suite 100
Monrovia, California 91016

Report Date: April 21, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603150303 M116−0.5
Sample ID: 158438001
Matrix: Soil
Collect Date: 11−MAR−06 11:55
Receive Date: 17−MAR−06
Collector: Client

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec Th, Solid												
Thorium−228		2.11	+/−0.808	0.777	1.00	pCi/g		LCW1	04/07/06	1807	517153	1
Thorium−230		0.704	+/−0.397	0.361	1.00	pCi/g						
Thorium−232		1.90	+/−0.706	0.382	1.00	pCi/g						
Alphaspec U, Solid												
Uranium−233/234		1.36	+/−0.432	0.329	1.00	pCi/g		LCW1	04/08/06	1543	517155	2
Uranium−235/236	U	0.043	+/−0.121	0.312	1.00	pCi/g						
Uranium−238		0.805	+/−0.337	0.316	1.00	pCi/g						
Rad Gamma Spec Analysis												
Gamma, (Pb−212,Ra−226,Ra−228)												
Lead−212		1.78	+/−0.174	0.0454	10.0	pCi/g		MJH1	04/14/06	0626	513807	3
Radium−226		0.791	+/−0.133	0.0573	2.00	pCi/g						
Radium−228		1.78	+/−0.361	0.103	1.00	pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Pb210, Solid												
Lead−210	U	0.687	+/−0.423	0.785	3.00	pCi/g		BXF1	04/11/06	1144	517518	4
Rad Total Uranium												
KPA, Total U, Solid												
Total Uranium		3.64	+/−0.101	0.217	1.00	ug/g		DRS1	04/20/06	1506	521637	5

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL−RAD−A−021B	LXM1	03/25/06	1124	513177
Dry Soil Prep	Dry Soil Prep GL−RAD−A−021	AXP2	03/24/06	1133	513174

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL−300, Th−01−RC Modified	
2	DOE EML HASL−300, U−02−RC Modified	
3	EML HASL 300, 4.5.2.3	
4	DOE RP280 Modified	
5	ASTM D 5174	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits

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Certificate of Analysis

Company : MWH Laboratories
Address : 750 Royal Oaks Drive, Suite 100
Monrovia, California 91016

Report Date: April 21, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603150303 M116−0.5 Project: MWHL00106
Sample ID: 158438001 Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Actinium−227	Alphaspec Th, Solid			76	
Actinium−227	Alphaspec Th, Solid			76	
Actinium−227	Alphaspec Th, Solid			76	
Uranium−232	Alphaspec U, Solid			95	(25%−125%)
Uranium−232	Alphaspec U, Solid			95	(25%−125%)
Uranium−232	Alphaspec U, Solid			95	(25%−125%)
Lead−210	GFPC, Pb210, Solid			61	(25%−125%)

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Company : MWH Laboratories
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Monrovia, California 91016

Report Date: April 21, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603150304 M116−0.5D
Sample ID: 158438002
Matrix: Soil
Collect Date: 11−MAR−06 12:00
Receive Date: 17−MAR−06
Collector: Client

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec Th, Solid												
Thorium−228		1.81	+/−0.588	0.549	1.00	pCi/g		LCW1	04/07/06	1807	517153	1
Thorium−230		1.24	+/−0.433	0.199	1.00	pCi/g						
Thorium−232		1.56	+/−0.502	0.259	1.00	pCi/g						
Alphaspec U, Solid												
Uranium−233/234		1.18	+/−0.468	0.562	1.00	pCi/g		LCW1	04/08/06	1543	517155	2
Uranium−235/236	U	0.253	+/−0.253	0.429	1.00	pCi/g						
Uranium−238		1.16	+/−0.453	0.507	1.00	pCi/g						
Rad Gamma Spec Analysis												
Gamma, (Pb−212,Ra−226,Ra−228)												
Lead−212		1.91	+/−0.198	0.0549	10.0	pCi/g		MJH1	04/14/06	0628	513807	3
Radium−226		1.04	+/−0.171	0.0673	2.00	pCi/g						
Radium−228		1.98	+/−0.345	0.122	1.00	pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Pb210, Solid												
Lead−210	U	0.694	+/−0.411	0.761	3.00	pCi/g		BXF1	04/11/06	1144	517518	4
Rad Total Uranium												
KPA, Total U, Solid												
Total Uranium		3.57	+/−0.0904	0.217	1.00	ug/g		DRS1	04/20/06	1508	521637	5

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL−RAD−A−021B	LXM1	03/25/06	1124	513177
Dry Soil Prep	Dry Soil Prep GL−RAD−A−021	AXP2	03/24/06	1133	513174

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL−300, Th−01−RC Modified	
2	DOE EML HASL−300, U−02−RC Modified	
3	EML HASL 300, 4.5.2.3	
4	DOE RP280 Modified	
5	ASTM D 5174	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits

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Report Date: April 21, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603150304 M116−0.5D
Sample ID: 158438002

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Actinium−227	Alphaspec Th, Solid			95	
Actinium−227	Alphaspec Th, Solid			95	
Actinium−227	Alphaspec Th, Solid			95	
Uranium−232	Alphaspec U, Solid			66	(25%−125%)
Uranium−232	Alphaspec U, Solid			66	(25%−125%)
Uranium−232	Alphaspec U, Solid			66	(25%−125%)
Lead−210	GFPC, Pb210, Solid			71	(25%−125%)

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Report Date: April 21, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603150305 M116−5
Sample ID: 158438003
Matrix: Soil
Collect Date: 11−MAR−06 12:05
Receive Date: 17−MAR−06
Collector: Client

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec Th, Solid												
Thorium−228		1.32	+/−0.469	0.412	1.00	pCi/g		LCW1	04/07/06	1807	517153	1
Thorium−230		0.873	+/−0.349	0.178	1.00	pCi/g						
Thorium−232		1.10	+/−0.399	0.178	1.00	pCi/g						
Alphaspec U, Solid												
Uranium−233/234		0.872	+/−0.346	0.320	1.00	pCi/g		LCW1	04/08/06	1543	517155	2
Uranium−235/236	U	0.0916	+/−0.140	0.279	1.00	pCi/g						
Uranium−238		0.904	+/−0.345	0.263	1.00	pCi/g						
Rad Gamma Spec Analysis												
Gamma, (Pb−212,Ra−226,Ra−228)												
Lead−212		1.52	+/−0.118	0.0893	10.0	pCi/g		MJH1	04/14/06	0627	513807	3
Radium−226		0.907	+/−0.190	0.142	2.00	pCi/g						
Radium−228		1.35	+/−0.398	0.280	1.00	pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Pb210, Solid												
Lead−210	U	0.443	+/−0.332	0.648	3.00	pCi/g		BXF1	04/11/06	1249	517518	4
Rad Total Uranium												
KPA, Total U, Solid												
Total Uranium		2.18	+/−0.0788	0.106	1.00	ug/g		DRS1	04/19/06	1031	521637	5

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL−RAD−A−021B	LXM1	03/25/06	1124	513177
Dry Soil Prep	Dry Soil Prep GL−RAD−A−021	AXP2	03/24/06	1133	513174

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL−300, Th−01−RC Modified	
2	DOE EML HASL−300, U−02−RC Modified	
3	EML HASL 300, 4.5.2.3	
4	DOE RP280 Modified	
5	ASTM D 5174	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits

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Report Date: April 21, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603150305 M116−5
Sample ID: 158438003

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Actinium−227	Alphaspec Th, Solid			108	
Actinium−227	Alphaspec Th, Solid			108	
Actinium−227	Alphaspec Th, Solid			108	
Uranium−232	Alphaspec U, Solid			91	(25%−125%)
Uranium−232	Alphaspec U, Solid			91	(25%−125%)
Uranium−232	Alphaspec U, Solid			91	(25%−125%)
Lead−210	GFPC, Pb210, Solid			63	(25%−125%)

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Report Date: April 21, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603150307 M117−0.5
Sample ID: 158438004
Matrix: Soil
Collect Date: 11−MAR−06 07:38
Receive Date: 17−MAR−06
Collector: Client

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec Th, Solid												
Thorium−228		2.22	+/−0.654	0.342	1.00	pCi/g		LCW1	04/08/06	0846	517153	1
Thorium−230		1.15	+/−0.427	0.240	1.00	pCi/g						
Thorium−232		1.59	+/−0.517	0.157	1.00	pCi/g						
Alphaspec U, Solid												
Uranium−233/234		0.775	+/−0.321	0.307	1.00	pCi/g		LCW1	04/08/06	1543	517155	2
Uranium−235/236	U	0.0123	+/−0.117	0.348	1.00	pCi/g						
Uranium−238		1.49	+/−0.430	0.253	1.00	pCi/g						
Rad Gamma Spec Analysis												
Gamma, (Pb−212,Ra−226,Ra−228)												
Lead−212		1.85	+/−0.213	0.0978	10.0	pCi/g		MJH1	04/14/06	0627	513807	3
Radium−226		0.891	+/−0.155	0.109	2.00	pCi/g						
Radium−228		1.92	+/−0.343	0.186	1.00	pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Pb210, Solid												
Lead−210	U	−0.0493	+/−0.247	0.639	3.00	pCi/g		BXF1	04/11/06	1249	517518	4
Rad Total Uranium												
KPA, Total U, Solid												
Total Uranium		1.45	+/−0.167	0.108	1.00	ug/g		DRS1	04/19/06	1033	521637	5

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL−RAD−A−021B	LXM1	03/25/06	1124	513177
Dry Soil Prep	Dry Soil Prep GL−RAD−A−021	AXP2	03/24/06	1133	513174

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL−300, Th−01−RC Modified	
2	DOE EML HASL−300, U−02−RC Modified	
3	EML HASL 300, 4.5.2.3	
4	DOE RP280 Modified	
5	ASTM D 5174	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits

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Company : MWH Laboratories
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Report Date: April 21, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603150307 M117−0.5 Project: MWHL00106
Sample ID: 158438004 Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Actinium−227	Alphaspec Th, Solid			103	
Actinium−227	Alphaspec Th, Solid			103	
Actinium−227	Alphaspec Th, Solid			103	
Uranium−232	Alphaspec U, Solid			91	(25%−125%)
Uranium−232	Alphaspec U, Solid			91	(25%−125%)
Uranium−232	Alphaspec U, Solid			91	(25%−125%)
Lead−210	GFPC, Pb210, Solid			73	(25%−125%)

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Company : MWH Laboratories
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Report Date: April 21, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603150308 M117−5
Sample ID: 158438005
Matrix: Soil
Collect Date: 11−MAR−06 07:48
Receive Date: 17−MAR−06
Collector: Client

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec Th, Solid												
Thorium−228		1.34	+/−0.478	0.457	1.00	pCi/g		LCW1	04/07/06	1807	517153	1
Thorium−230		1.33	+/−0.443	0.195	1.00	pCi/g						
Thorium−232		1.05	+/−0.385	0.174	1.00	pCi/g						
Alphaspec U, Solid												
Uranium−233/234		1.22	+/−0.402	0.335	1.00	pCi/g		LCW1	04/08/06	1543	517155	2
Uranium−235/236	U	0.198	+/−0.192	0.297	1.00	pCi/g						
Uranium−238		0.979	+/−0.354	0.257	1.00	pCi/g						
Rad Gamma Spec Analysis												
Gamma, (Pb−212,Ra−226,Ra−228)												
Lead−212		1.60	+/−0.154	0.0696	10.0	pCi/g		MJH1	04/14/06	0628	513807	3
Radium−226		0.940	+/−0.156	0.0843	2.00	pCi/g						
Radium−228		1.59	+/−0.321	0.157	1.00	pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Pb210, Solid												
Lead−210	U	0.261	+/−0.382	0.843	3.00	pCi/g		BXF1	04/11/06	1249	517518	4
Rad Total Uranium												
KPA, Total U, Solid												
Total Uranium		3.15	+/−0.0764	0.213	1.00	ug/g		DRS1	04/20/06	1511	521637	5

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL−RAD−A−021B	LXM1	03/25/06	1124	513177
Dry Soil Prep	Dry Soil Prep GL−RAD−A−021	AXP2	03/24/06	1133	513174

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL−300, Th−01−RC Modified	
2	DOE EML HASL−300, U−02−RC Modified	
3	EML HASL 300, 4.5.2.3	
4	DOE RP280 Modified	
5	ASTM D 5174	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits

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Company : MWH Laboratories
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Report Date: April 21, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603150308 M117−5
Sample ID: 158438005

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Actinium−227	Alphaspec Th, Solid			112	
Actinium−227	Alphaspec Th, Solid			112	
Actinium−227	Alphaspec Th, Solid			112	
Uranium−232	Alphaspec U, Solid			85	(25%−125%)
Uranium−232	Alphaspec U, Solid			85	(25%−125%)
Uranium−232	Alphaspec U, Solid			85	(25%−125%)
Lead−210	GFPC, Pb210, Solid			58	(25%−125%)

QUALITY CONTROL DATA

QC Summary

Report Date: April 21, 2006

MWH Laboratories
750 Royal Oaks Drive, Suite 100
Monrovia, California

Contact: **Ms. Julie Lee**

Workorder: **158438**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch 517153											
QC1201062928 158269001 DUP											
Thorium-228		3.04 +/-0.921		1.77 +/-0.556	pCi/g	53*		(0%-20%)	LCW1	04/07/06	18:07
Thorium-230		0.824 +/-0.407		1.46 +/-0.469	pCi/g	56*		(0%-20%)			
Thorium-232		2.42 +/-0.774		1.62 +/-0.496	pCi/g	40*		(0%-20%)			
QC1201062930 LCS											
Thorium-228			U	-0.0451 +/-0.162	pCi/g			(75%-125%)		04/08/06	08:46
Thorium-230	46.7			39.9 +/-8.09	pCi/g		85	(75%-125%)			
Thorium-232				0.238 +/-0.193	pCi/g			(75%-125%)			
QC1201062927 MB											
Thorium-228			U	0.265 +/-0.193	pCi/g					04/07/06	18:07
Thorium-230				0.350 +/-0.191	pCi/g						
Thorium-232			U	0.00663 +/-0.0513	pCi/g						
QC1201062929 158269001 MS											
Thorium-228		3.04 +/-0.921		2.04 +/-0.597	pCi/g			(75%-125%)			
Thorium-230	53.1	0.824 +/-0.407		46.2 +/-7.98	pCi/g		85	(75%-125%)			
Thorium-232		2.42 +/-0.774		2.32 +/-0.638	pCi/g			(75%-125%)			
Batch 517155											
QC1201062932 158269001 DUP											
Uranium-233/234		0.804 +/-0.329		1.45 +/-0.475	pCi/g	57*		(0%-20%)	LCW1	04/08/06	15:43
Uranium-235/236		0.162 +/-0.159	U	0.122 +/-0.168	pCi/g	28*		(0%-20%)			
Uranium-238		1.21 +/-0.397		1.35 +/-0.463	pCi/g	11		(0%-20%)			
QC1201062934 LCS											
Uranium-233/234				10.1 +/-1.11	pCi/g			(75%-125%)			
Uranium-235/236				0.834 +/-0.362	pCi/g			(75%-125%)			
Uranium-238	11.4			11.6 +/-1.19	pCi/g		102	(75%-125%)			
QC1201062931 MB											

QC Summary

Workorder: **158438**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 517155										
Uranium-233/234			U	0.149 +/-0.142	pCi/g					
Uranium-235/236			U	-0.0238 +/-0.0269	pCi/g				LCW1	04/08/06 15:43
Uranium-238			U	0.0406 +/-0.0761	pCi/g					
QC1201062933 158269001 MS										
Uranium-233/234		0.804 +/-0.329		14.4 +/-1.37	pCi/g			(75%-125%)		
Uranium-235/236		0.162 +/-0.159		0.578 +/-0.308	pCi/g			(75%-125%)		
Uranium-238	13.0	1.21 +/-0.397		15.7 +/-1.43	pCi/g		111	(75%-125%)		
Rad Gamma Spec										
Batch 513807										
QC1201055621 158438003 DUP										
Lead-212		1.52 +/-0.118		1.51 +/-0.183	pCi/g	1			MJH1	04/14/06 08:48
Radium-226		0.907 +/-0.190		0.882 +/-0.161	pCi/g	3		(0%-20%)		
Radium-228		1.35 +/-0.398		1.42 +/-0.328	pCi/g	5		(0%-20%)		
QC1201055622 LCS										
Americium-241	24.4			22.8 +/-1.08	pCi/g		94	(75%-125%)		04/13/06 18:53
Cesium-137	9.28			10.0 +/-0.628	pCi/g		108	(75%-125%)		
Cobalt-60	13.3			14.0 +/-0.822	pCi/g		105	(75%-125%)		
Lead-212			U	0.142 +/-0.307	pCi/g					
Radium-226			U	0.168 +/-0.327	pCi/g			(75%-125%)		
Radium-228			U	0.881 +/-0.784	pCi/g			(75%-125%)		
QC1201055620 MB										
Lead-212			U	0.0112 +/-0.0502	pCi/g					04/14/06 06:29
Radium-226			U	0.0728 +/-0.0657	pCi/g					
Radium-228			U	0.0843 +/-0.0724	pCi/g					
Rad Gas Flow										
Batch 517518										
QC1201063771 158438003 DUP										
Lead-210	U	0.443 +/-0.332	U	0.141 +/-0.345	pCi/g	0		(0%-20%)	BXF1	04/11/06 12:49
QC1201063773 LCS										

QC Summary

Workorder: **158438**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch 517518											
Lead-210	6.85			5.47 +/-0.783	pCi/g		80	(75%-125%)			
QC1201063770 MB											
Lead-210			U	0.0576 +/-0.245	pCi/g				BXF1	04/11/06	12:48
QC1201063772 158438003 MS											
Lead-210	8.31	U 0.443 +/-0.332		6.39 +/-0.947	pCi/g		77	(75%-125%)		04/11/06	12:49
Rad Total U											
Batch 521637											
QC1201073175 158269001 DUP											
Total Uranium		2.45 +/-0.158		3.83 +/-0.093	ug/g	44*		(0%-20%)	DRS1	04/20/06	15:13
QC1201073177 LCS											
Total Uranium	10.0			8.04 +/-0.508	ug/g		80	(75%-125%)		04/19/06	10:46
QC1201073178 LCSD											
Total Uranium	1.00			0.859 +/-0.0197	ug/g	161	86			04/19/06	10:48
QC1201073174 MB											
Total Uranium			U	-0.0101 +/-0.000454	ug/g					04/19/06	10:37
QC1201073176 158269001 MS											
Total Uranium	9.43	2.45 +/-0.158		13.0 +/-0.411	ug/g		112	(75%-125%)		04/20/06	15:15

Notes:
The Qualifiers in this report are defined as follows:

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.
- H Analytical holding time exceeded.
- J Indicates an estimated value.
- U Target analyte was analyzed for but not detected above the MDL, MDA, or LOD.
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- d The 2:1 depletion requirement was not met for this sample
- h Sample preparation or preservation holding time exceeded.

QC Summary

Workorder: **158438**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

RAW DATA

Radiochemistry Batch Checklist, Rev 4

Batch# 517153 Product: Th Date: 04/8/20

Criteria:	Yes	No	Comments
Sample Solids are less than 100 mg for GAB.			N/A
If activity less 10* MDA, error is 150% or less of sample activity. If greater 10* MDA, error is 40% or less. If below the MDA, error is okay.	✓		
Instrument source check is within limits. Instument bkg check is within limits.	✓		
Method RDL has been met.	✓		
If duplicate activities are less 5* MDA, then rpd is 100% or less. If greater 5* MDA, then rpd 20% or less. If below the MDA, the rpd is 0%. Or meets the client's required RER acceptance criteria.	✓		case narrative
Tracer yield is 15-125% . Carrier yield 25-125%. Or meets the client's contract acceptance criteria.	✓		
Method blank is less than the RDL. (If rad samples, < 5% of lowest activity)	✓		case narrative
Sample was run within hold time. Special requirements page checked	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms. All lineouts initialed and dated. No transcription errors are apparent.	✓		
QC data entered into QC database. Batch entered into Case Narrative.	✓		
Batch non-conformances completed If applicable.			N/A

General Engineering Laboratories

2/22/2005

Primary Review Performed By: Pamela Kelley 04/8/20

Secondary Review Performed By: 4/11/20

04/8 - 04/15

Thorium-228 Que Sheet

03-APR-06

Batch #: 517153 **Analyst:** LCW1 **Minimum DueDate:** 08-APR-06

Tracer Isotope: Ac-227 **Tracer Code:** 0387-D102 **Expiration Date:** 7/11/06 **Vol:** 0.1 **Ac-227 Separation Date/Time:** 4/7/06 11:00

LCS Isotope: Th-230 **LCS Code:** 01690 **Expiration Date:** 6/23/06 **Vol:** 0.1

Spike Isotope: Th-230 **Spike Code:** 01590 **Expiration Date:** 6/23/06 **Vol:** 0.1

Prep Date: 4/6/06 **Initials:** LCW **Pipet ID:** 2167543 **Balance ID:** 504102772 **Witness:** SLC 4-6-06

Sample I	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Label #	Aliquot (g/l/f)	Th Det #	Ash Weight (g)
158269001	2603140361 M121-0.5	SAMPLE		1 pCi/g	SOIL	MWHL002	10-MAR-06	81	0.218	1	0.217
158269002	2603140362 M121-5	SAMPLE		1 pCi/g	SOIL	MWHL002	10-MAR-06	82	0.231	3	0.222
158269003	2603140364 M121-5D	SAMPLE		1 pCi/g	SOIL	MWHL002	10-MAR-06	83	0.227	4	0.218
158269004	2603140365 M121-80	SAMPLE		1 pCi/g	SOIL	MWHL002	10-MAR-06	84	0.222	5	0.214
158270001	2603100106 M118-0.5	SAMPLE		1 pCi/g	SOIL	MWHL002	08-MAR-06	85	0.217	7	0.211
158270002	2603100107 M118-5	SAMPLE		1 pCi/g	SOIL	MWHL002	08-MAR-06	86	0.204	9	0.198
158437001	2603150347 M119-0.5	SAMPLE		1 pCi/g	SOIL	MWHL002	14-MAR-06	87	0.208	10	0.203
158437002	2603150349 M119-0.5D	SAMPLE		1 pCi/g	SOIL	MWHL002	14-MAR-06	88	0.211	11	0.205
158437003	2603150350 M119-5	SAMPLE		1 pCi/g	SOIL	MWHL002	14-MAR-06	89	0.202	~~12~~ PH4/18/06 (16)	0.196
158437004	2603150352 M119-50	SAMPLE		1 pCi/g	SOIL	MWHL002	14-MAR-06	90	0.217	21	0.210
158438001	2603150303 M116-0.5	SAMPLE		1 pCi/g	SOIL	MWHL002	11-MAR-06	91	0.201	23	0.196
158438002	2603150304 M11600.5D	SAMPLE		1 pCi/g	SOIL	MWHL002	11-MAR-06	92	0.221	26	0.215
158438003	2603150305 M116-5	SAMPLE		1 pCi/g	SOIL	MWHL002	11-MAR-06	93	0.213	27	0.206
158438004	2603150307 M117-0.5	SAMPLE		1 pCi/g	SOIL	MWHL002	11-MAR-06	94	0.211	~~28~~ PH4/18/06 (17)	0.206
158438005	2603150308 M117-5	SAMPLE		1 pCi/g	SOIL	MWHL002	11-MAR-06	95	0.213	29	0.208
1201062927	MB for batch 517153	MB		1 pCi/g	SOIL	QC ACCOUNT		96	0.231	30	NA
1201062928	2603140361 M121-0.5(158269001DU	DUP		1 pCi/g	SOIL	QC ACCOUNT	10-MAR-06	97	0.205	32	0.200
1201062929	2603140361 M121-0.5(158269001MS	MS		1 pCi/g	SOIL	QC ACCOUNT	10-MAR-06	98	0.203	34	0.198
1201062930	LCS for batch 517153	LCS		1 pCi/g	SOIL	QC ACCOUNT		99	0.231	~~36~~ PH4/18/06 (18)	NA

4/11/06

Solid Sample Dissolution by: **LEACH or DIGESTION** (Circle One)

Data Reviewed By: Pamela J. Kelley 04/18/06

Weight/Loss Aliquot Correction Report

Select What to Correct Aliquot to

(•) Dry Weight ( ) Wet Weight

Submit

Batch ID: 517153

Calculate Corrected Aliquot

Aliquot Correction to Dry Weight for Batch 517153

Sample Id	Aliquot (G)	Sample Type	Parent Sample Id	Loss (Dec)	Corrected Aliquot (G)
158269001	.212	SAMPLE	NA	.0257	0.21759460
158269002	.222	SAMPLE	NA	.0386	0.23092117
158269003	.218	SAMPLE	NA	.0392	0.22691164
158269004	.214	SAMPLE	NA	.0352	0.22182665
158270001	.211	SAMPLE	NA	.0280	0.21708541
158270002	.198	SAMPLE	NA	.0280	0.20372448
158437001	.203	SAMPLE	NA	.0244	0.20808790
158437002	.205	SAMPLE	NA	.0279	0.21088368
158437003	.196	SAMPLE	NA	.0274	0.20152307
158437004	.210	SAMPLE	NA	.0304	0.21658415
158438001	.196	SAMPLE	NA	.0227	0.20056275
158438002	.215	SAMPLE	NA	.0263	0.22081785
158438003	.206	SAMPLE	NA	.0328	0.21300110
158438004	.206	SAMPLE	NA	.0213	0.21050402

gH 4/8/06

4/10/06

158438005	.208	SAMPLE	NA	.0253	0.21340148
1201062927		MB	NA	NA	
1201062928	.200	DUP	158269001	.0257	0.20527793
1201062929	.198	MS	158269001	.0257	0.20322515
1201062930		LCS	NA	NA	

General Engineering Laboratories, LLC

4/18/06

4/18/06

Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

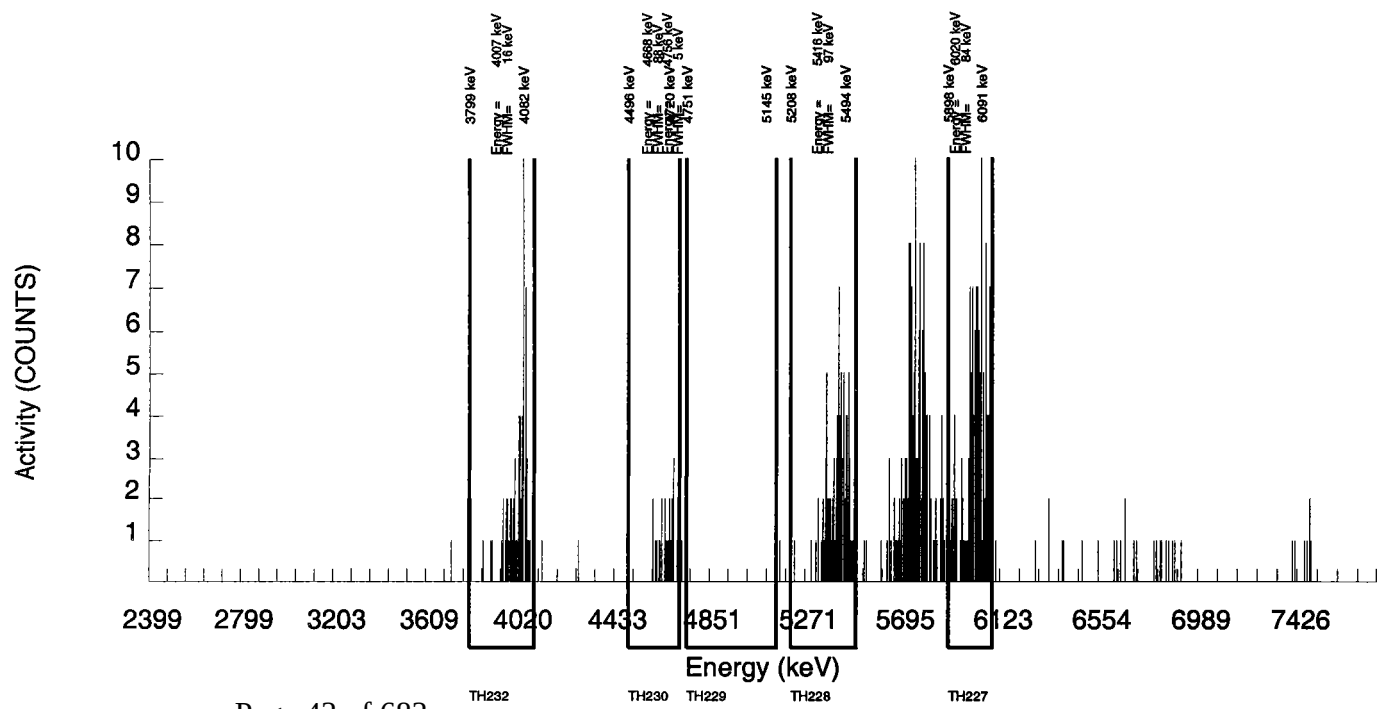
BATCH NUMBER: 517153 SAMPLE DATE : 7-APR-2006 11:00:00.	SAMPLE ID : S0158269001_TH SAMPLE QTY: 0.218 G
DETECTOR NUMBER :33088 AVERAGE %EFFICIENCY :27.8191 % YIELD : 80.055	COUNT DATE: 7-APR-2006 18:07:51 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :LCW1

MS : 0159-O MSD : 0159-O LCS : 0159-O TRACER : 0387-B-102 BKG FILE: B001.CNF;687 BKG DATE: 2-APR-2006	MS PCI/G : 49.47609 MSD PCI/G : 49.47609 LCS PCI/G : 49.47609 TRACER DPM : 4.3582 EFF FILE : W001.CNF;233 CAL DATE: 3-APR-2006	MS ISOTOPE : TH-230 MSD ISOTOPE: TH-230 LCS ISOTOPE: TH-230 TRACER ISOTOPE: AC227 LIB FILE : ENV_ALPHA_TH.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	125.760	0.240	54.75400	9.01E+00	2.38E+00	3.78E-01
TH-228	5363.000	78.640	3.360	99.94000	3.04E+00	9.21E-01	4.46E-01
TH229	4900.000	-1.160	2.160	99.52000	-4.51E-02	9.61E-02	3.82E-01
TH-230	4625.000	21.320	1.680	100.0000	8.24E-01	4.07E-01	3.49E-01
TH-232	3972.000	62.520	0.480	100.0000	2.42E+00	7.74E-01	2.41E-01

REVIEWED BY: DATE :



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 517153 SAMPLE DATE : 7-APR-2006 11:00:00.	SAMPLE ID : S0158438001_TH SAMPLE QTY: 0.201 G
DETECTOR NUMBER :22873 AVERAGE %EFFICIENCY :27.6563 % YIELD : 75.762	COUNT DATE: 7-APR-2006 18:07:56 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :LCW1

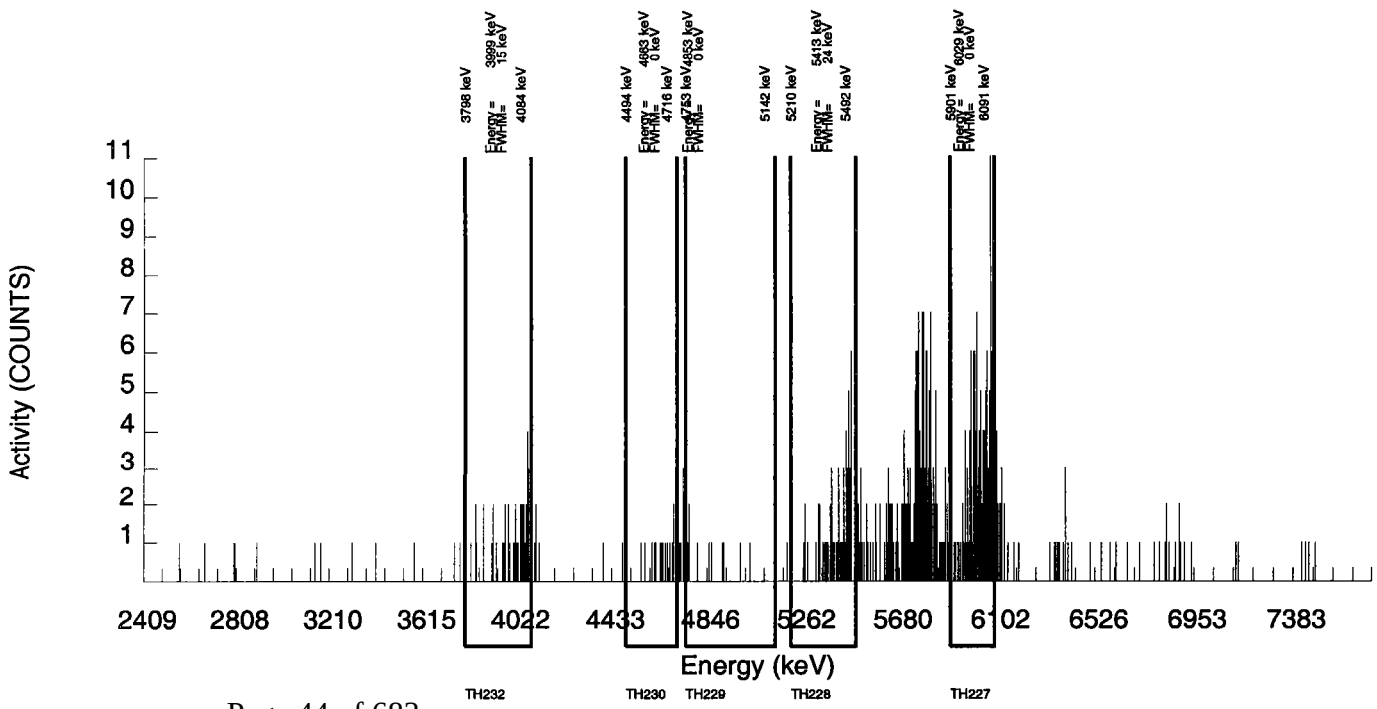
MS : 0159-O MSD : 0159-O LCS : 0159-O TRACER : 0387-B-102 BKG FILE: B023.CNF;681 BKG DATE: 2-APR-2006	MS PCI/G : 53.66063 MSD PCI/G : 53.66063 LCS PCI/G : 53.66063 TRACER DPM : 4.3582 EFF FILE : W023.CNF;181 CAL DATE: 3-APR-2006	MS ISOTOPE : TH-230 MSD ISOTOPE: TH-230 LCS ISOTOPE: TH-230 TRACER ISOTOPE: AC227 LIB FILE : ENV_ALPHA_TH.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	118.320	1.680	54.75400	9.77E+00	2.67E+00	7.45E-01
TH-228	5363.000	47.400	9.600	99.94000	2.11E+00	8.08E-01	7.77E-01
TH229	4900.000	9.840	2.160	99.52000	4.41E-01	3.29E-01	4.40E-01
TH-230	4625.000	15.800	1.200	100.0000	7.04E-01	3.97E-01	3.61E-01
TH-232	3972.000	42.560	1.440	100.0000	1.90E+00	7.06E-01	3.82E-01

REVIEWED BY:

DATE : PJH 04/08/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 517153
SAMPLE DATE : 7-APR-2006 11:00:00.

SAMPLE ID : S0158438002_TH
SAMPLE QTY: 0.221 G

DETECTOR NUMBER :34427
AVERAGE %EFFICIENCY :31.1163
% YIELD : 95.065

COUNT DATE: 7-APR-2006 18:07:57
ELAPSED LIVE TIME(SEC): 14400.00
ANALYST :LCW1

MS : 0159-O
MSD : 0159-O
LCS : 0159-O
TRACER : 0387-B-102
BKG FILE: B026.CNF;688
BKG DATE: 2-APR-2006

MS PCI/G : 48.80447
MSD PCI/G : 48.80447
LCS PCI/G : 48.80447
TRACER DPM : 4.3582
EFF FILE : W026.CNF;193
CAL DATE: 4-APR-2006

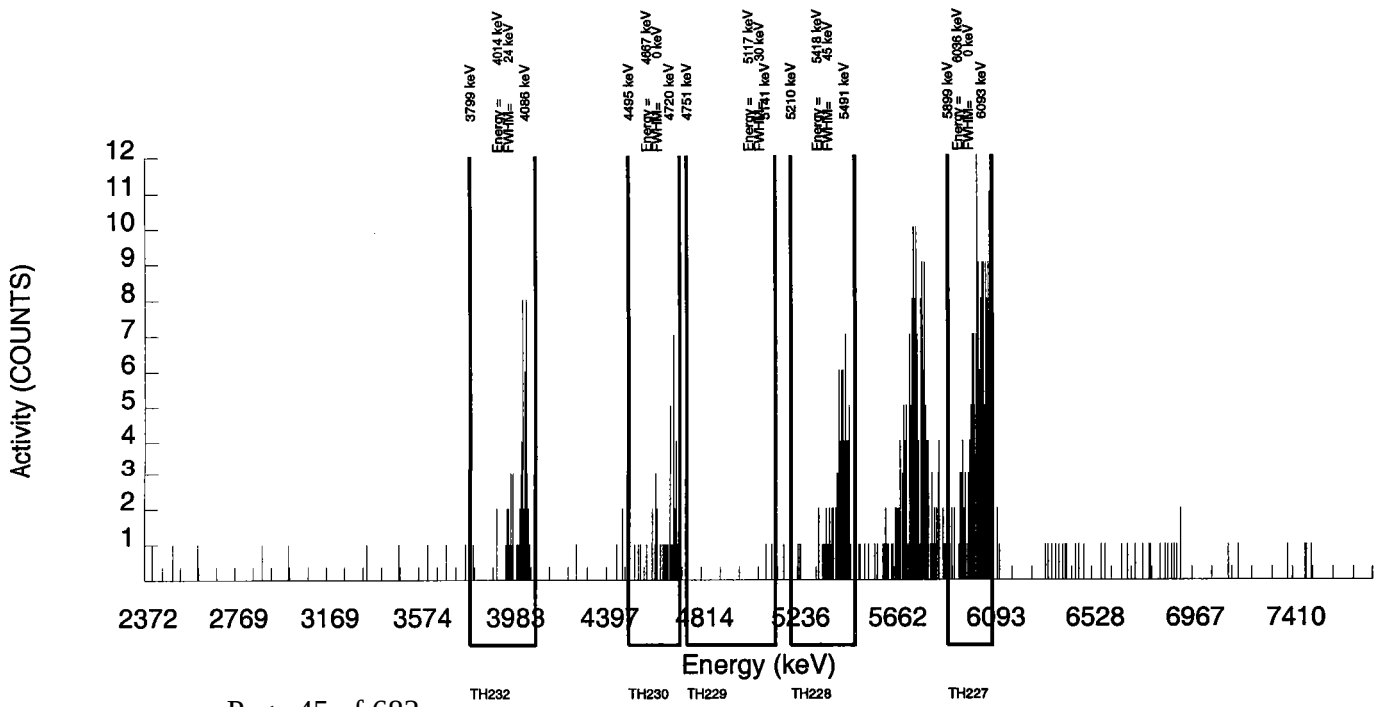
MS ISOTOPE : TH-230
MSD ISOTOPE: TH-230
LCS ISOTOPE: TH-230
TRACER ISOTOPE: AC227
LIB FILE : ENV_ALPHA_TH.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	167.040	0.960	54.75400	8.88E+00	2.01E+00	4.02E-01
TH-228	5363.000	63.000	12.000	99.94000	1.81E+00	5.88E-01	5.49E-01
TH229	4900.000	-2.080	4.080	99.52000	-6.00E-02	1.00E-01	3.58E-01
TH-230	4625.000	43.280	0.720	100.0000	1.24E+00	4.33E-01	1.99E-01
TH-232	3972.000	54.320	1.680	100.0000	1.56E+00	5.02E-01	2.59E-01

REVIEWED BY:

DATE : PJH 4/8/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

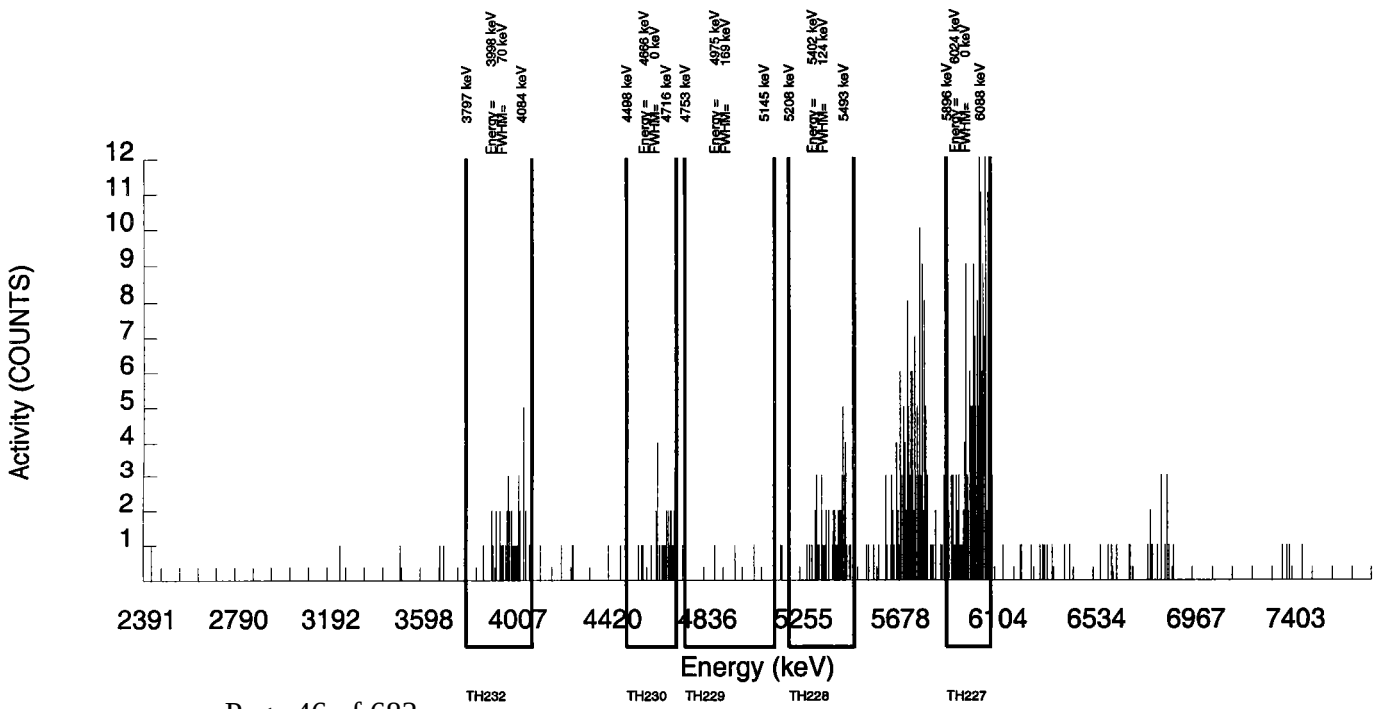
BATCH NUMBER: 517153 SAMPLE DATE : 7-APR-2006 11:00:00.	SAMPLE ID : S0158438003_TH SAMPLE QTY: 0.213 G
DETECTOR NUMBER :31436 AVERAGE %EFFICIENCY :28.5131 % YIELD : 108.067	COUNT DATE: 7-APR-2006 18:07:57 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :LCW1

MS : 0159-O MSD : 0159-O LCS : 0159-O TRACER : 0387-B-102 BKG FILE: B027.CNF;689 BKG DATE: 2-APR-2006	MS PCI/G : 50.63750 MSD PCI/G : 50.63750 LCS PCI/G : 50.63750 TRACER DPM : 4.3582 EFF FILE : W027.CNF;220 CAL DATE: 4-APR-2006	MS ISOTOPE : TH-230 MSD ISOTOPE: TH-230 LCS ISOTOPE: TH-230 TRACER ISOTOPE: AC227 LIB FILE : ENV_ALPHA_TH.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	174.000	0.000	54.75400	9.22E+00	2.04E+00	1.59E-01
TH-228	5363.000	46.000	6.000	99.94000	1.32E+00	4.69E-01	4.12E-01
TH229	4900.000	2.040	0.960	99.52000	5.86E-02	1.04E-01	2.17E-01
TH-230	4625.000	30.520	0.480	100.0000	8.73E-01	3.49E-01	1.78E-01
TH-232	3972.000	38.520	0.480	100.0000	1.10E+00	3.99E-01	1.78E-01

REVIEWED BY: DATE : PJH 4/8/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

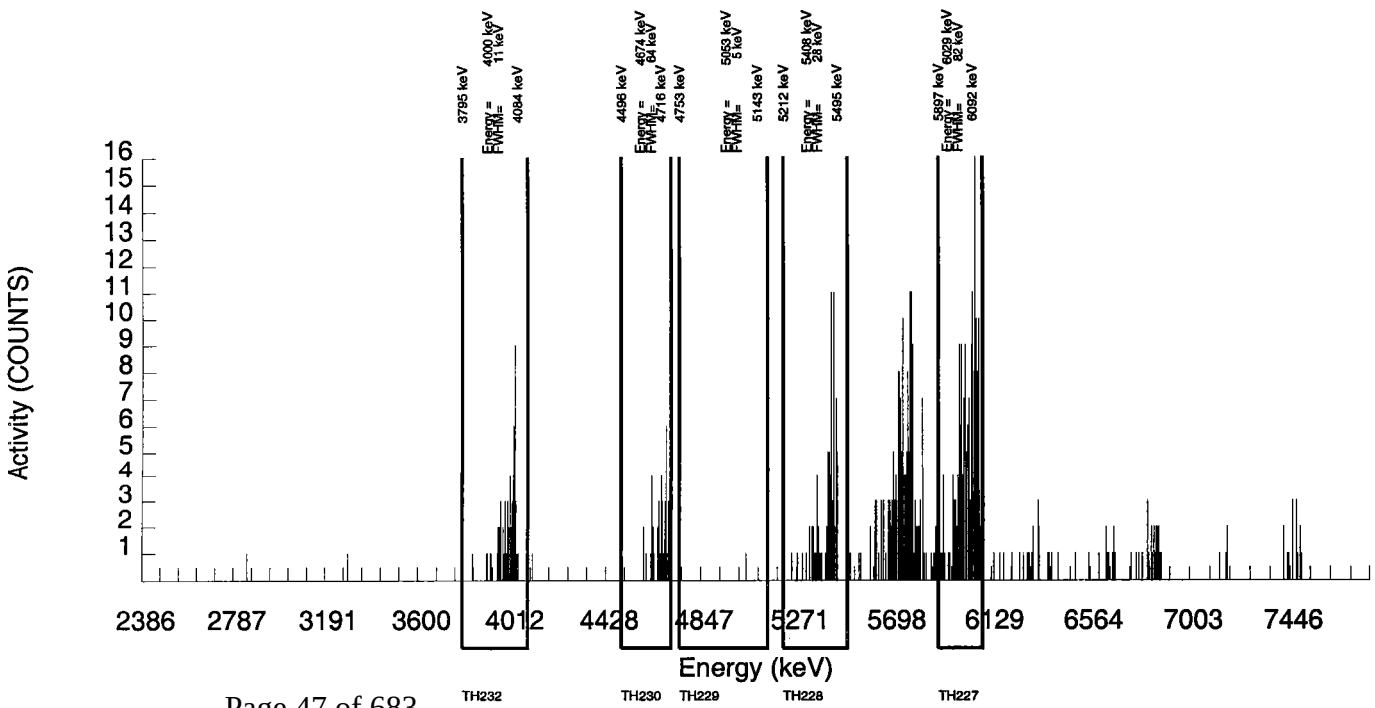
BATCH NUMBER: 517153 SAMPLE DATE : 7-APR-2006 11:00:00.	SAMPLE ID : S0158438004_TH SAMPLE QTY: 0.211 G
DETECTOR NUMBER :33203 AVERAGE %EFFICIENCY :29.0269 % YIELD : 103.288	COUNT DATE: 8-APR-2006 08:46:45 ELAPSED LIVE TIME(SEC): 14399.99 ANALYST :LCW1

MS : 0159-O MSD : 0159-O LCS : 0159-O TRACER : 0387-B-102 BKG FILE: B017.CNF;1516 BKG DATE: 2-APR-2006	MS PCI/G : 51.11748 MSD PCI/G : 51.11748 LCS PCI/G : 51.11748 TRACER DPM : 4.3582 EFF FILE : W017.CNF;1149 CAL DATE: 3-APR-2006	MS ISOTOPE : TH-230 MSD ISOTOPE: TH-230 LCS ISOTOPE: TH-230 TRACER ISOTOPE: AC227 LIB FILE : ENV_ALPHA_TH.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	165.520	0.480	54.75400	9.30E+00	2.17E+00	3.50E-01
TH-228	5363.000	74.640	3.360	99.94000	2.22E+00	6.54E-01	3.42E-01
TH229	4900.000	0.520	0.480	99.52000	1.55E-02	6.30E-02	1.85E-01
TH-230	4625.000	38.800	1.200	100.0000	1.15E+00	4.27E-01	2.40E-01
TH-232	3972.000	53.760	0.240	100.0000	1.59E+00	5.17E-01	1.57E-01

REVIEWED BY: DATE : PJH 4/8/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 517153
SAMPLE DATE : 7-APR-2006 11:00:00.

SAMPLE ID : S0158438005_TH
SAMPLE QTY: 0.213 G

DETECTOR NUMBER :30419
AVERAGE %EFFICIENCY :28.0377
% YIELD : 112.123

COUNT DATE: 7-APR-2006 18:07:57
ELAPSED LIVE TIME(SEC): 14400.00
ANALYST :LCW1

MS : 0159-O
MSD : 0159-O
LCS : 0159-O
TRACER : 0387-B-102
BKG FILE: B029.CNF;689
BKG DATE: 2-APR-2006

MS PCI/G : 50.63750
MSD PCI/G : 50.63750
LCS PCI/G : 50.63750
TRACER DPM : 4.3582
EFF FILE : W029.CNF;211
CAL DATE: 4-APR-2006

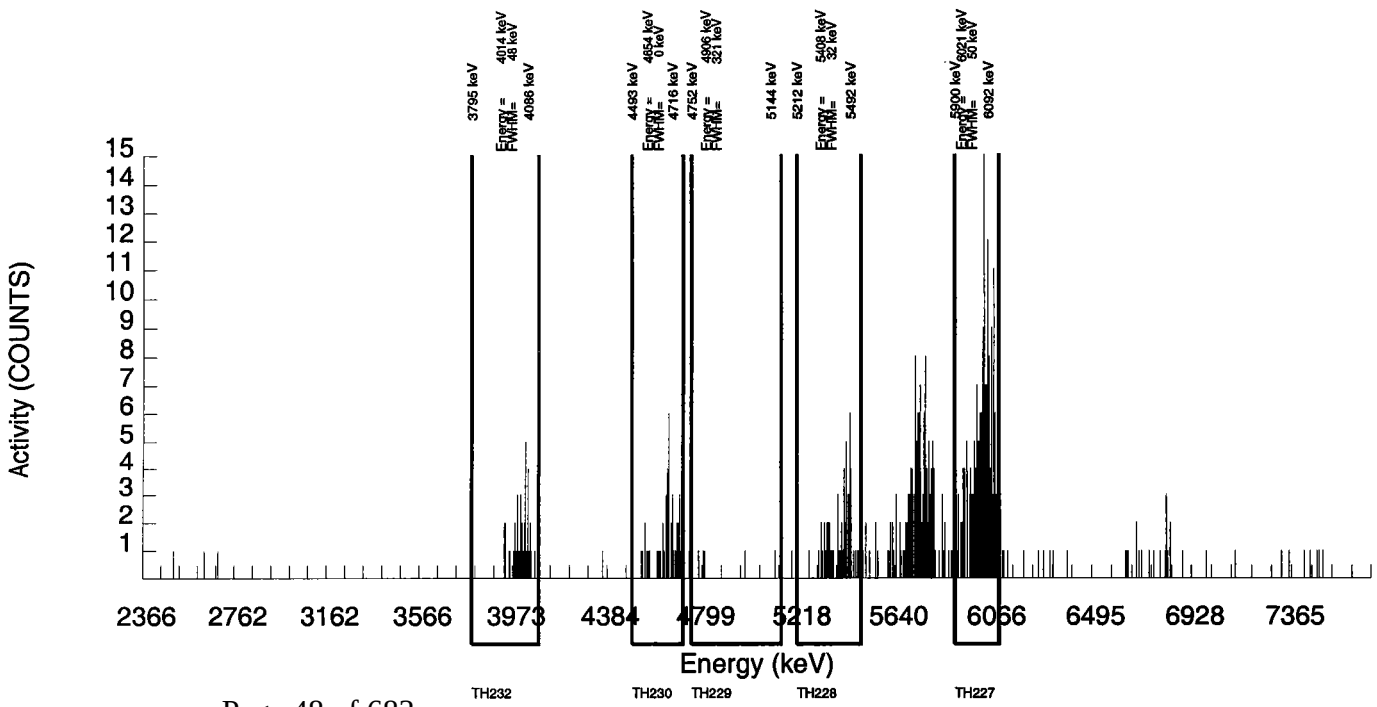
MS ISOTOPE : TH-230
MSD ISOTOPE: TH-230
LCS ISOTOPE: TH-230
TRACER ISOTOPE: AC227
LIB FILE : ENV_ALPHA_TH.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	177.520	0.480	54.75400	9.22E+00	2.02E+00	3.23E-01
TH-228	5363.000	47.840	8.160	99.94000	1.34E+00	4.78E-01	4.57E-01
TH229	4900.000	3.560	1.440	99.52000	1.00E-01	1.31E-01	2.42E-01
TH-230	4625.000	47.280	0.720	100.0000	1.33E+00	4.43E-01	1.95E-01
TH-232	3972.000	37.520	0.480	100.0000	1.05E+00	3.85E-01	1.74E-01

REVIEWED BY:

DATE : PJH 4/8/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

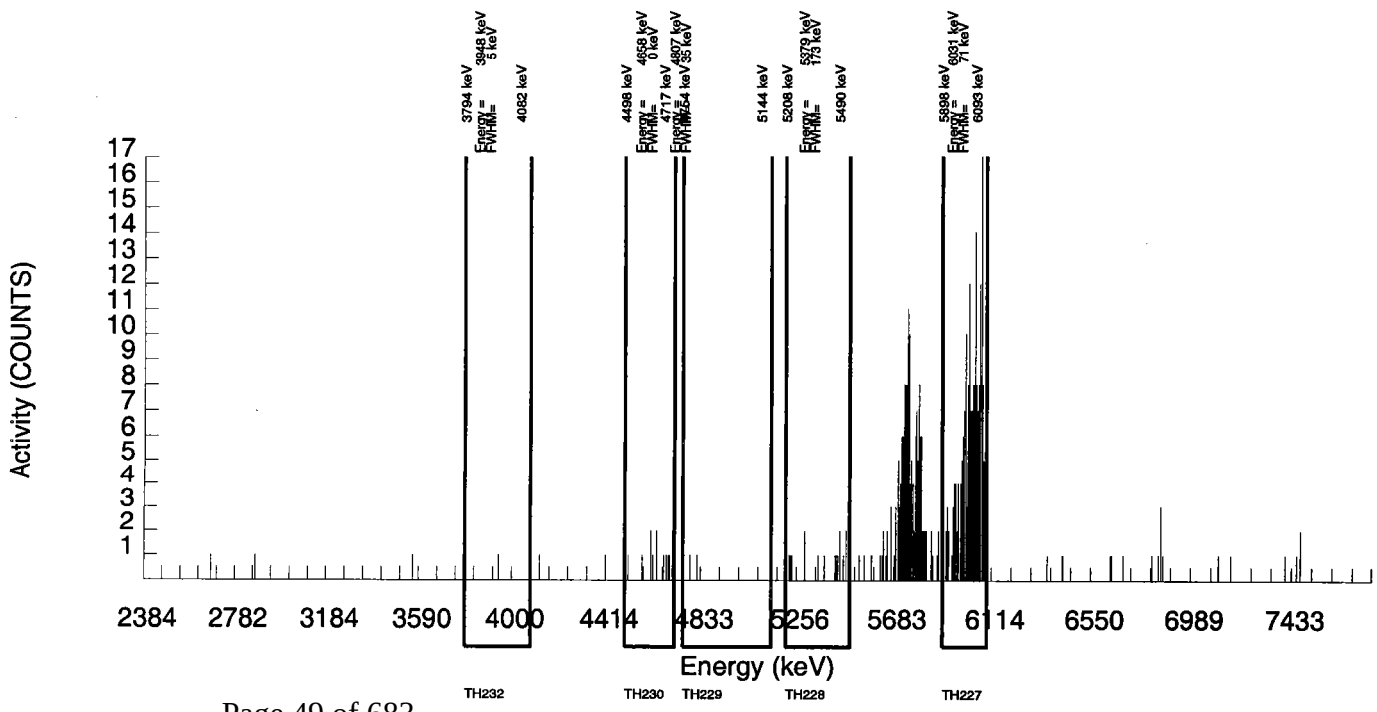
BATCH NUMBER: 517153 SAMPLE DATE : 7-APR-2006 11:00:00.	SAMPLE ID : S1201062927_TH SAMPLE QTY: 0.231 G
DETECTOR NUMBER :30420 AVERAGE %EFFICIENCY :30.3262 % YIELD : 113.145	COUNT DATE: 7-APR-2006 18:07:57 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :LCW1

MS : 0159-O MSD : 0159-O LCS : 0159-O TRACER : 0387-B-102 BKG FILE: B030.CNF;686 BKG DATE: 2-APR-2006	MS PCI/G : 46.69172 MSD PCI/G : 46.69172 LCS PCI/G : 46.69172 TRACER DPM : 4.3582 EFF FILE : W030.CNF;200 CAL DATE: 4-APR-2006	MS ISOTOPE : TH-230 MSD ISOTOPE: TH-230 LCS ISOTOPE: TH-230 TRACER ISOTOPE: AC227 LIB FILE : ENV_ALPHA_TH.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	193.760	0.240	54.75400	8.50E+00	1.79E+00	2.31E-01
TH-228	5363.000	11.160	3.840	99.94000	2.65E-01	1.93E-01	2.87E-01
TH229	4900.000	-0.400	2.400	99.52000	-9.52E-03	7.64E-02	2.43E-01
TH-230	4625.000	14.760	0.240	100.0000	3.50E-01	1.91E-01	1.25E-01
TH-232	3972.000	0.280	0.720	100.0000	6.63E-03	5.13E-02	1.64E-01

REVIEWED BY: DATE :



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 517153
SAMPLE DATE : 7-APR-2006 11:00:00.

SAMPLE ID : S1201062928_TH
SAMPLE QTY: 0.205 G

DETECTOR NUMBER :33207
AVERAGE %EFFICIENCY :32.1060
% YIELD : 107.711

COUNT DATE: 7-APR-2006 18:07:59
ELAPSED LIVE TIME(SEC): 14399.99
ANALYST :LCW1

MS : 0159-O
MSD : 0159-O
LCS : 0159-O
TRACER : 0387-B-102
BKG FILE: B032.CNF;697
BKG DATE: 2-APR-2006

MS PCI/G : 52.61360
MSD PCI/G : 52.61360
LCS PCI/G : 52.61360
TRACER DPM : 4.3582
EFF FILE : W032.CNF;242
CAL DATE: 4-APR-2006

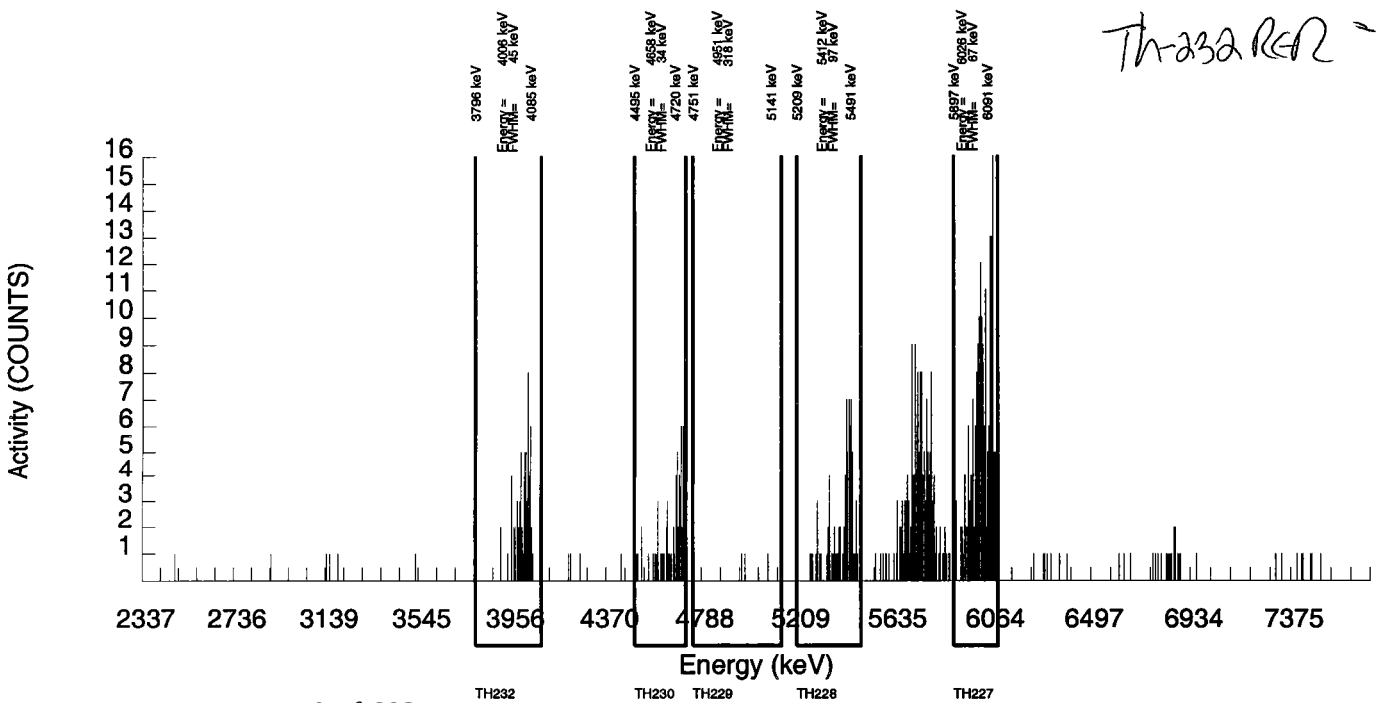
MS ISOTOPE : TH-230
MSD ISOTOPE: TH-230
LCS ISOTOPE: TH-230
TRACER ISOTOPE: AC227
LIB FILE : ENV_ALPHA_TH.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	195.280	0.720	54.75400	9.58E+00	2.10E+00	3.41E-01
TH-228	5363.000	66.920	10.080	99.94000	1.77E+00	5.56E-01	4.71E-01
TH229	4900.000	1.120	2.880	99.52000	2.98E-02	1.15E-01	2.90E-01
TH-230	4625.000	55.320	1.680	100.0000	1.46E+00	4.69E-01	2.39E-01
TH-232	3972.000	61.040	0.960	100.0000	1.62E+00	4.96E-01	2.00E-01

REVIEWED BY: DATE :

RPD
Th228 = 39.8% act < 5x MDA
Th230 = 55.7% act < 5x MDA
Th232 = 39.6% act < 5x MDA
Th-228 RER = 2.31
Th-230 RER = 2.01
Th-232 RER = 1.71



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 517153 SAMPLE DATE : 7-APR-2006 11:00:00.	SAMPLE ID : S1201062929_TH SAMPLE QTY: 0.203 G
DETECTOR NUMBER :32697 AVERAGE %EFFICIENCY :32.8564 % YIELD : 105.273	COUNT DATE: 7-APR-2006 18:07:59 ELAPSED LIVE TIME(SEC): 14399.99 ANALYST :LCW1

MS : 0159-O MSD : 0159-O LCS : 0159-O TRACER : 0387-B-102 BKG FILE: B034.CNF;686 BKG DATE: 2-APR-2006	MS PCI/G : 53.13196 MSD PCI/G : 53.13196 LCS PCI/G : 53.13196 TRACER DPM : 4.3582 EFF FILE : W034.CNF;217 CAL DATE: 4-APR-2006	MS ISOTOPE : TH-230 MSD ISOTOPE: TH-230 LCS ISOTOPE: TH-230 TRACER ISOTOPE: AC227 LIB FILE : ENV_ALPHA_TH.N

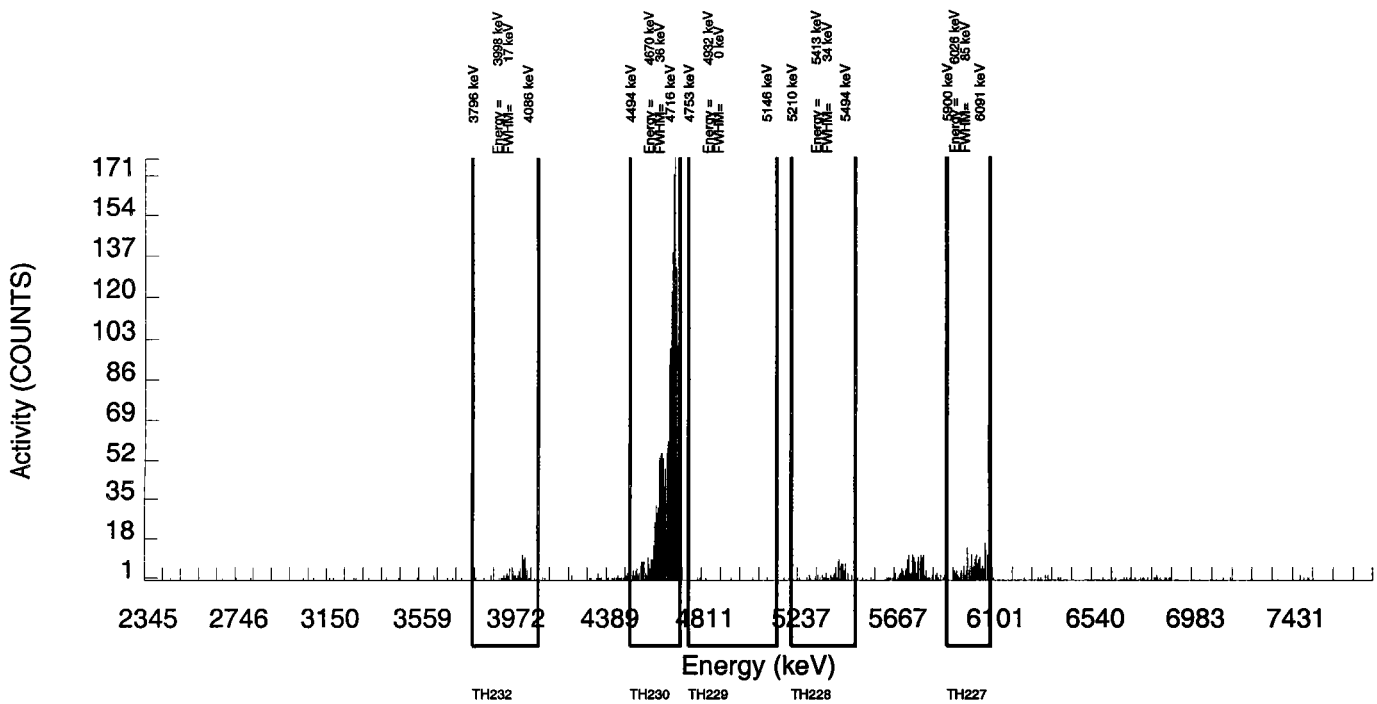
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	195.320	1.680	54.75400	9.67E+00	2.12E+00	4.47E-01
TH-228	5363.000	76.280	6.720	99.94000	2.04E+00	5.97E-01	4.03E-01
TH229	4900.000	1.280	6.720	99.52000	3.44E-02	1.67E-01	4.04E-01
TH-230	4625.000	1727.400	3.600	100.0000	4.62E+01	7.98E+00	3.16E-01
TH-232	3972.000	86.640	3.360	100.0000	2.32E+00	6.38E-01	3.08E-01

REVIEWED BY: DATE :

4/10/06

$MS = \frac{42.2 - .824}{53.1} = 85.4\%$



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 517153
SAMPLE DATE : 7-APR-2006 11:00:00.

SAMPLE ID : S1201062930_TH
SAMPLE QTY: 0.231 G

DETECTOR NUMBER :21063
AVERAGE %EFFICIENCY :25.5920
% YIELD : 90.256

COUNT DATE: 8-APR-2006 08:46:45
ELAPSED LIVE TIME(SEC): 14399.99
ANALYST :LCW1

MS : 0159-O
MSD : 0159-O
LCS : 0159-O
TRACER : 0387-B-102
BKG FILE: B018.CNF;666
BKG DATE: 2-APR-2006

MS PCI/G : 46.69172
MSD PCI/G : 46.69172
LCS PCI/G : 46.69172
TRACER DPM : 4.3582
EFF FILE : W018.CNF;190
CAL DATE: 3-APR-2006

MS ISOTOPE : TH-230
MSD ISOTOPE: TH-230
LCS ISOTOPE: TH-230
TRACER ISOTOPE: AC227
LIB FILE : ENV_ALPHA_TH.N

NUCLIDE ACTIVITY SUMMARY

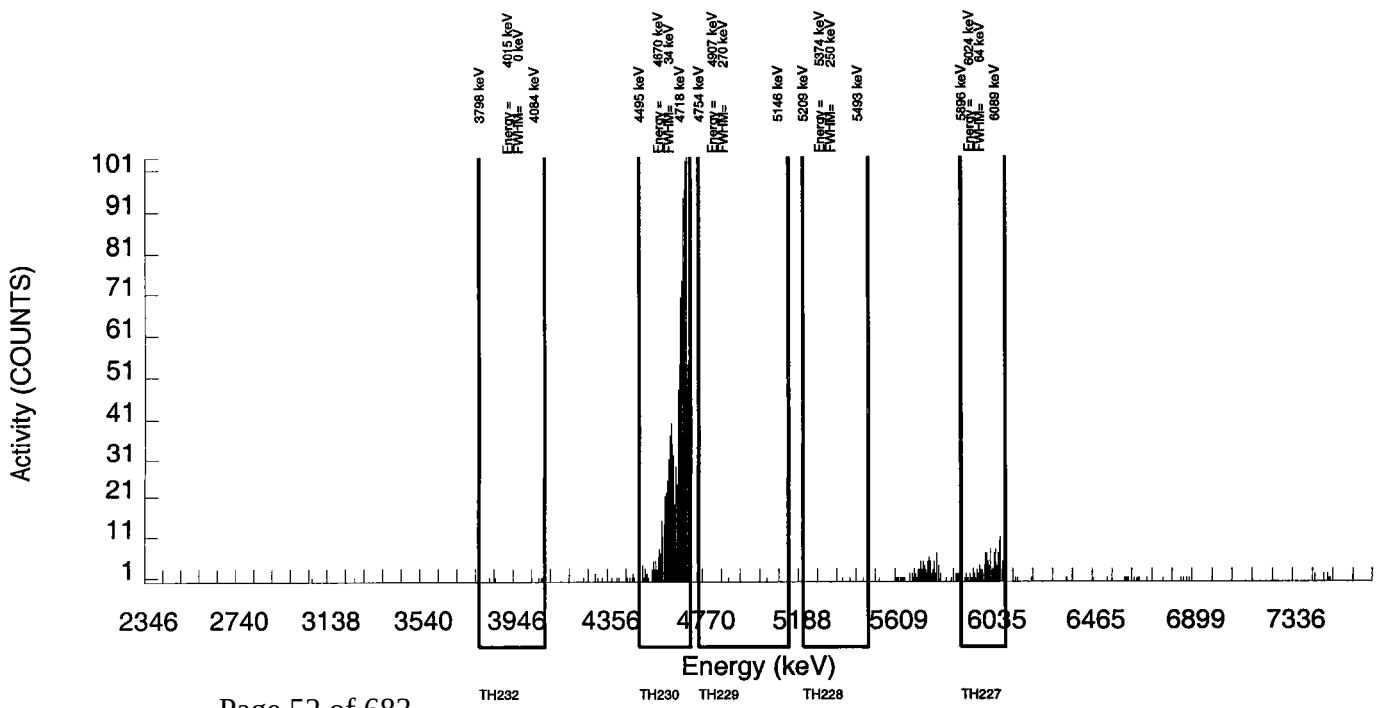
NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	127.520	0.480	54.75400	8.50E+00	2.23E+00	4.15E-01
TH-228	5363.000	-1.280 ✓	5.280	99.94000	-4.51E-02	1.62E-01	4.82E-01
TH229	4900.000	1.080	1.920	99.52000	3.82E-02	1.32E-01	3.34E-01
TH-230	4625.000	1134.760	0.240	100.0000	3.99E+01	8.09E+00	1.86E-01
TH-232	3972.000	6.760	0.240	100.0000	2.38E-01	1.93E-01	1.86E-01

REVIEWED BY: DATE :

QD 4/10/06

PJH 4/8/06

$LCS = \frac{39.9}{46.7} = 85.49\%$



Radiochemistry Batch Checklist, Rev 4

Batch# 5171SS Product: U Date: 4/10/06

Criteria:	Yes	No	Comments
Sample Solids are less than 100 mg for GAB.			NA
If activity less 10* MDA, error is 150% or less of sample activity. If greater 10* MDA, error is 40% or less. If below the MDA, error is okay.	✓		
Instrument source check is within limits. Instument bkg check is within limits.	✓		
Method RDL has been met.	✓		
If duplicate activities are less 5* MDA, then rpd is 100% or less. If greater 5* MDA, then rpd 20% or less. If below the MDA, the rpd is 0%. Or meets the client's required RER acceptance criteria.	✓		
Tracer yield is 15-125% . Carrier yield 25-125%. Or meets the client's contract acceptance criteria.	✓		
Method blank is less than the RDL. (If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time. Special requirements page checked	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			NA
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms. All lineouts initialed and dated. No transcription errors are apparent.	✓		
QC data entered into QC database. Batch entered into Case Narrative.	✓		
Batch non-conformances completed If applicable.			NA

General Engineering Laboratories

2/22/2005

Primary Review Performed By: 4/10/06

Secondary Review Performed By: Pamela J Kelley 04/11/06

3/8 - 3/15

MWHL

Uranium Que Sheet

Batch #: 517155 **Analyst:** LCW1 **Minimum DueDate:** 08-APR-06

Tracer Isotope: U-232/U-236 **Tracer Code:** 010884 **Expiration Date:** 1/12/07 **Vol:** 0.1

LCS Isotope: U-238 **LCS Code:** 08558B **Expiration Date:** 11/21/06 **Vol:** 0.1

Spike Isotope: U-238 **Spike Code:** 08558B **Expiration Date:** 11/21/06 **Vol:** 0.1

Prep Date: 4/6/06 **Initials:** LOW **Pipet ID:** 2761543 **Balance ID:** 50410272 **Witness:** JLG 4-6-06

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Label #	Aliquot (g/l/f)	U Det #	Ash Weight (g)
158269001	2603140361 M121-0.5	SAMPLE		1 pCi/g	SOIL	MWHL002	10-MAR-06	81	0.218	32	0.212
158269002	2603140362 M121-5	SAMPLE		1 pCi/g	SOIL	MWHL002	10-MAR-06	82	0.231	33	0.222
158269003	2603140364 M121-5D	SAMPLE		1 pCi/g	SOIL	MWHL002	10-MAR-06	83	0.221	34	0.218
158269004	2603140365 M121-80	SAMPLE		1 pCi/g	SOIL	MWHL002	10-MAR-06	84	0.222	37	0.214
158270001	2603100106 M118-0.5	SAMPLE		1 pCi/g	SOIL	MWHL002	08-MAR-06	85	0.217	38	0.211
158270002	2603100107 M118-5	SAMPLE		1 pCi/g	SOIL	MWHL002	08-MAR-06	86	0.204	40	0.198
158437001	2603150347 M119-0.5	SAMPLE		1 pCi/g	SOIL	MWHL002	14-MAR-06	87	0.208	41	0.203
158437002	2603150349 M119-0.5D	SAMPLE		1 pCi/g	SOIL	MWHL002	14-MAR-06	88	0.211	42	0.205
158437003	2603150350 M119-5	SAMPLE		1 pCi/g	SOIL	MWHL002	14-MAR-06	89	0.202	43	0.196
158437004	2603150352 M119-50	SAMPLE		1 pCi/g	SOIL	MWHL002	14-MAR-06	90	0.217	44	0.210
158438001	2603150303 M116-0.5	SAMPLE		1 pCi/g	SOIL	MWHL002	11-MAR-06	91	0.201	45	0.196
158438002	2603150304 M11600.5D	SAMPLE		1 pCi/g	SOIL	MWHL002	11-MAR-06	92	0.221	46	0.215
158438003	2603150305 M116-5	SAMPLE		1 pCi/g	SOIL	MWHL002	11-MAR-06	93	0.213	47	0.200
158438004	2603150307 M117-0.5	SAMPLE		1 pCi/g	SOIL	MWHL002	11-MAR-06	94	0.211	48	0.206
158438005	2603150308 M117-5	SAMPLE		1 pCi/g	SOIL	MWHL002	11-MAR-06	95	0.213	77	0.208
1201062931	MB for batch 517155	MB		1 pCi/g	SOIL	QC ACCOUNT		96	0.231	78	NA
1201062932	2603140361 M121-0.5(158269001DU	DUP		1 pCi/g	SOIL	QC ACCOUNT	10-MAR-06	97	0.205	79	0.200
1201062933	2603140361 M121-0.5(158269001MS	MS		1 pCi/g	SOIL	QC ACCOUNT	10-MAR-06	98	0.203	80	0.198
1201062934	LCS for batch 517155	LCS		1 pCi/g	SOIL	QC ACCOUNT		99	0.231	81	NA

Choose SOP used: GL-RAD-A-011, GL-RAD-A-038 (circled), GL-RAD-A-045, GL-RAD-A-043

Solid Sample Dissolution by: **LEACH or DIGESTION** (DIGESTION circled)
Circle One

Data Reviewed By: [signature] 4/10/06

General Engineering Laboratories, Radiochemistry Division

Weight/Loss Aliquot Correction Report

Select What to Correct Aliquot to

(•) Dry Weight ( ) Wet Weight

Submit

Batch ID: 517155

Calculate Corrected Aliquot

Aliquot Correction to Dry Weight for Batch 517153

Sample Id	Aliquot (G)	Sample Type	Parent Sample Id	Loss (Dec)	Corrected Aliquot (G)
158269001	.212	SAMPLE	NA	.0257	0.21759460
158269002	.222	SAMPLE	NA	.0386	0.23092117
158269003	.218	SAMPLE	NA	.0392	0.22691164
158269004	.214	SAMPLE	NA	.0352	0.22182665
158270001	.211	SAMPLE	NA	.0280	0.21708541
158270002	.198	SAMPLE	NA	.0280	0.20372448
158437001	.203	SAMPLE	NA	.0244	0.20808790
158437002	.205	SAMPLE	NA	.0279	0.21088368
158437003	.196	SAMPLE	NA	.0274	0.20152307
158437004	.210	SAMPLE	NA	.0304	0.21658415
158438001	.196	SAMPLE	NA	.0227	0.20056275
158438002	.215	SAMPLE	NA	.0263	0.22081785
158438003	.206	SAMPLE	NA	.0328	0.21300110
158438004	.206	SAMPLE	NA	.0213	0.21050402

4/10/06

4/10/06

158438005	.208	SAMPLE	NA	.0253	0.21340148
1201062927		MB	NA	NA	
1201062928	.200	DUP	158269001	.0257	0.20527793
1201062929	.198	MS	158269001	.0257	0.20322515
1201062930		LCS	NA	NA	

General Engineering Laboratories, LLC

PJ4 4/11/06

4/11/06

Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 517155	SAMPLE ID : S0158269001_UU
SAMPLE DATE : 10-MAR-2006 00:00:00	SAMPLE QTY: 0.218 G
DETECTOR NUMBER :33207	COUNT DATE: 8-APR-2006 15:43:12
AVERAGE %EFFICIENCY :32.1060	ELAPSED LIVE TIME(SEC): 14400.00
% YIELD : 81.934	ANALYST :LCW1

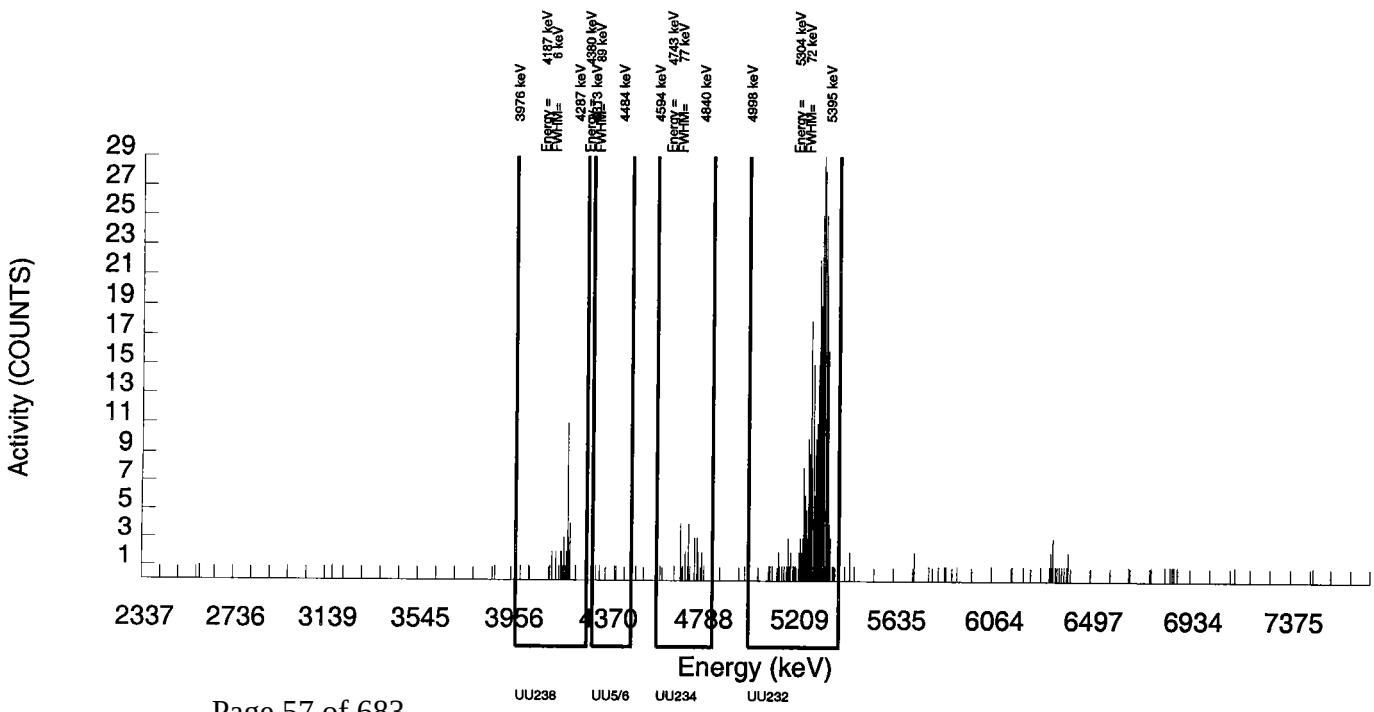
MS : 0858-B	MS PCI/G : 12.06122	MS ISOTOPE : U-238
MSD : 0858-B	MSD PCI/G : 12.06122	MSD ISOTOPE: U-238
LCS : 0858-B	LCS PCI/G : 12.06122	LCS ISOTOPE: U-238
TRACER : 0688-H	TRACER DPM : 5.4124	TRACER ISOTOPE: U232
BKG FILE: B032.CNF;697	EFF FILE : W032.CNF;242	LIB FILE : ENV_ALPHA_UU.N
BKG DATE: 2-APR-2006	CAL DATE: 4-APR-2006	

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	24.560	1.440	100.0000	8.04E-01	3.51E-01	2.81E-01	3.29E-01
U232	5302.100	341.440	4.560	100.0000	1.12E+01	2.08E+00	4.24E-01	1.20E+00
U-235	4391.000	4.000	0.000	80.90000	1.62E-01	1.60E-01	1.21E-01	1.59E-01
U-238	4184.730	37.040	0.960	100.0000	1.21E+00	4.37E-01	2.47E-01	3.97E-01

REVIEWED BY: DATE : 4/11/06

4/10/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 517155	SAMPLE ID : S0158438001_UU
SAMPLE DATE : 11-MAR-2006 00:00:00	SAMPLE QTY: 0.201 G
DETECTOR NUMBER :34430	COUNT DATE: 8-APR-2006 15:43:14
AVERAGE %EFFICIENCY :29.4155	ELAPSED LIVE TIME(SEC): 14399.99
% YIELD : 95.013	ANALYST :LCW1

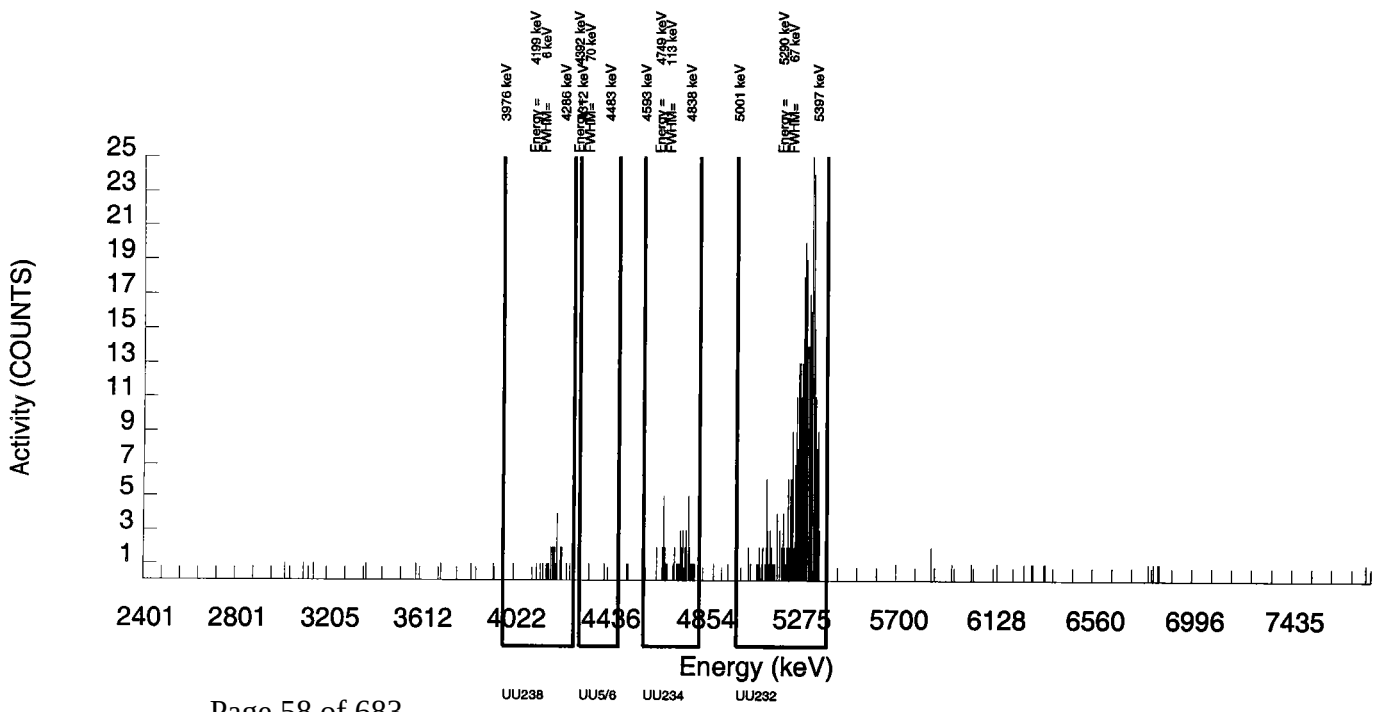
MS : 0858-B	MS PCI/G : 13.08133	MS ISOTOPE : U-238
MSD : 0858-B	MSD PCI/G : 13.08133	MSD ISOTOPE: U-238
LCS : 0858-B	LCS PCI/G : 13.08133	LCS ISOTOPE: U-238
TRACER : 0688-H	TRACER DPM : 5.4123	TRACER ISOTOPE: U232
BKG FILE: B045.CNF;676	EFF FILE : W045.CNF;184	LIB FILE : ENV_ALPHA_UU.N
BKG DATE: 2-APR-2006	CAL DATE: 4-APR-2006	

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	40.840	2.160	100.0000	1.36E+00	4.71E-01	3.29E-01	4.32E-01
U232	5302.100	362.760	6.240	100.0000	1.21E+01	2.09E+00	4.89E-01	1.26E+00
U-235	4391.000	1.040	0.960	80.90000	4.30E-02	1.21E-01	3.12E-01	1.21E-01
U-238	4184.730	24.080	1.920	100.0000	8.05E-01	3.54E-01	3.16E-01	3.37E-01

REVIEWED BY: 4/10/06

DATE : PJN 4/11/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 517155	SAMPLE ID : S0158438002_UU
SAMPLE DATE : 11-MAR-2006 00:00:00	SAMPLE QTY: 0.221 G
DETECTOR NUMBER :42471	COUNT DATE: 8-APR-2006 15:43:14
AVERAGE %EFFICIENCY :33.4472	ELAPSED LIVE TIME(SEC): 14399.99
% YIELD : 66.035	ANALYST :LCW1

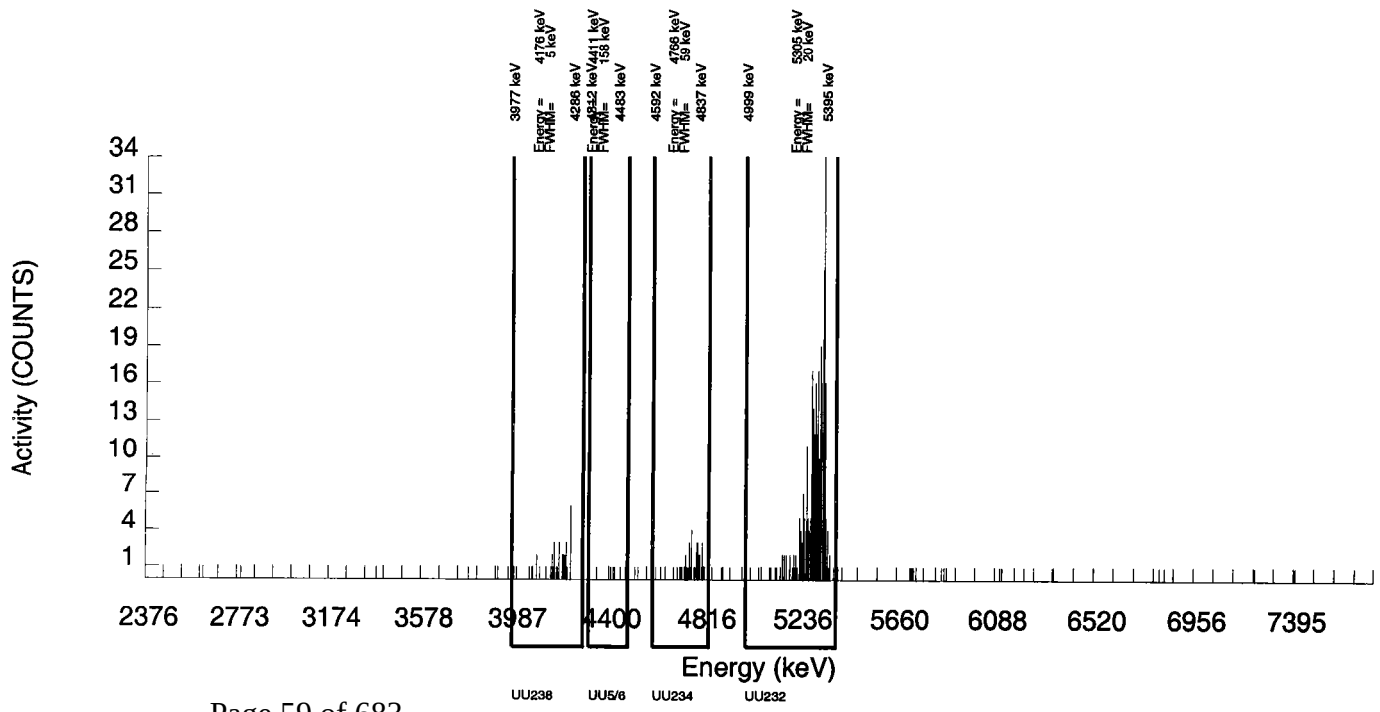
MS : 0858-B	MS PCI/G : 11.89750	MS ISOTOPE : U-238
MSD : 0858-B	MSD PCI/G : 11.89750	MSD ISOTOPE: U-238
LCS : 0858-B	LCS PCI/G : 11.89750	LCS ISOTOPE: U-238
TRACER : 0688-H	TRACER DPM : 5.4123	TRACER ISOTOPE: U232
BKG FILE: B046.CNF;691	EFF FILE : W046.CNF;188	LIB FILE : ENV_ALPHA_UU.N
BKG DATE: 2-APR-2006	CAL DATE: 4-APR-2006	

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	30.760	6.240	100.0000	1.18E+00	4.99E-01	5.62E-01	4.68E-01
U232	5302.100	286.680	10.320	100.0000	1.10E+01	2.09E+00	6.90E-01	1.31E+00
U-235	4391.000	5.320	1.680	80.90000	2.53E-01	2.56E-01	4.29E-01	2.53E-01
U-238	4184.730	30.200	4.800	100.0000	1.16E+00	4.84E-01	5.07E-01	4.53E-01

REVIEWED BY: DATE : 4/11/06

4/11/06



GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

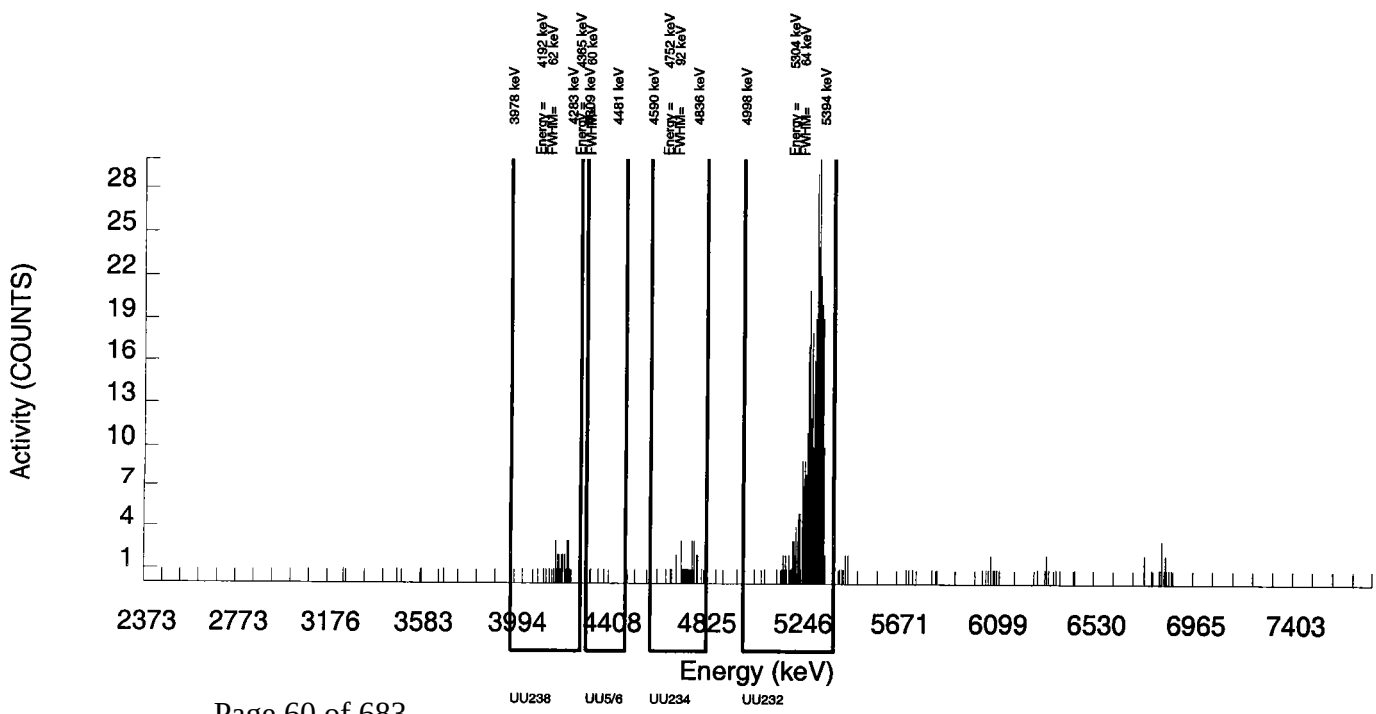
BATCH NUMBER: 517155	SAMPLE ID : S0158438003_UU
SAMPLE DATE : 11-MAR-2006 00:00:00	SAMPLE QTY: 0.213 G
DETECTOR NUMBER :30449	COUNT DATE: 8-APR-2006 15:43:14
AVERAGE %EFFICIENCY :29.6690	ELAPSED LIVE TIME(SEC): 14399.99
% YIELD : 91.375	ANALYST :LCW1

MS : 0858-B	MS PCI/G : 12.34435	MS ISOTOPE : U-238
MSD : 0858-B	MSD PCI/G : 12.34435	MSD ISOTOPE: U-238
LCS : 0858-B	LCS PCI/G : 12.34435	LCS ISOTOPE: U-238
TRACER : 0688-H	TRACER DPM : 5.4123	TRACER ISOTOPE: U232
BKG FILE: B047.CNF;683	EFF FILE : W047.CNF;175	LIB FILE : ENV_ALPHA_UU.N
BKG DATE: 2-APR-2006	CAL DATE: 4-APR-2006	

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	26.840	2.160	100.0000	8.72E-01	3.66E-01	3.20E-01	3.46E-01
U232	5302.100	351.880	3.120	100.0000	1.14E+01	1.98E+00	3.65E-01	1.20E+00
U-235	4391.000	2.280	0.720	80.90000	9.16E-02	1.41E-01	2.79E-01	1.40E-01
U-238	4184.730	27.800	1.200	100.0000	9.04E-01	3.67E-01	2.63E-01	3.45E-01

REVIEWED BY: DATE :



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 517155 SAMPLE DATE : 11-MAR-2006 00:00:00	SAMPLE ID : S0158438004_UU SAMPLE QTY: 0.211 G
DETECTOR NUMBER :42483 AVERAGE %EFFICIENCY :31.1977 % YIELD : 91.343	COUNT DATE: 8-APR-2006 15:43:14 ELAPSED LIVE TIME(SEC): 14399.99 ANALYST :LCW1

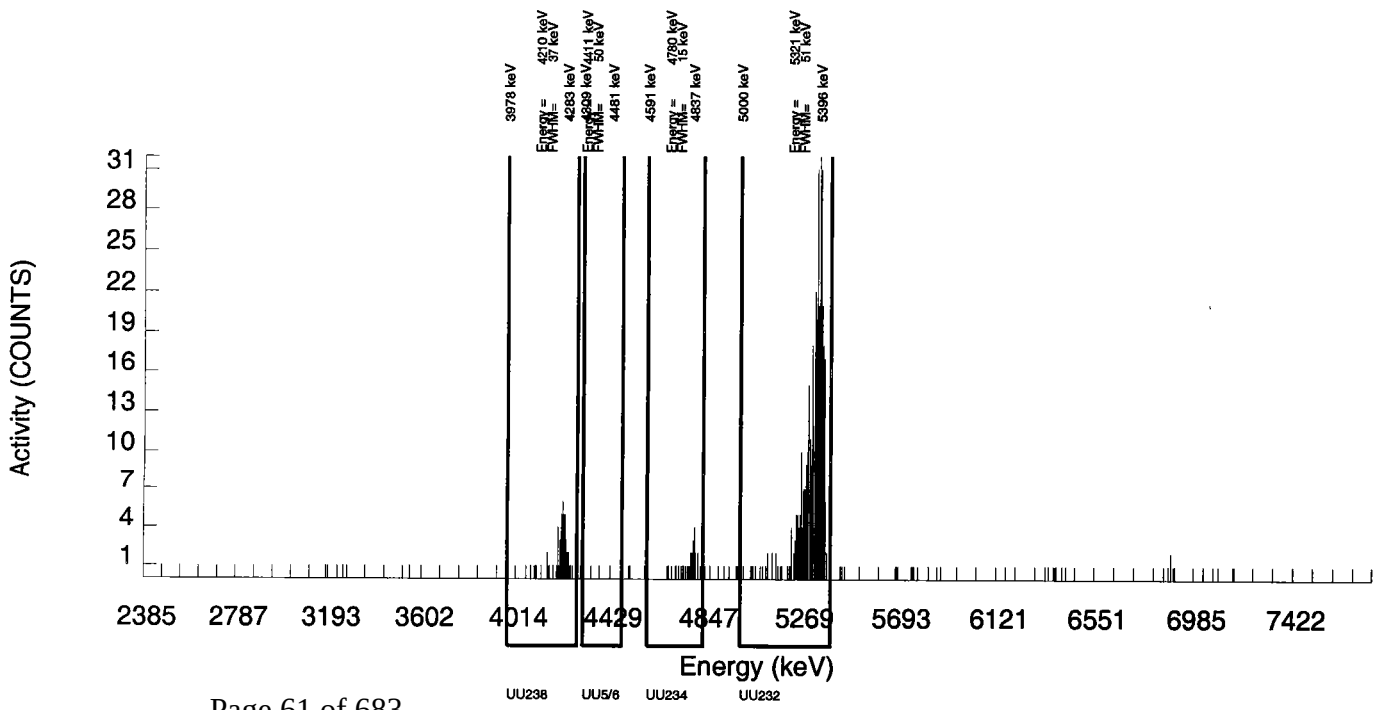
MS : 0858-B MSD : 0858-B LCS : 0858-B TRACER : 0688-H BKG FILE: B048.CNF;687 BKG DATE: 2-APR-2006	MS PCI/G : 12.46136 MSD PCI/G : 12.46136 LCS PCI/G : 12.46136 TRACER DPM : 5.4123 EFF FILE : W048.CNF;213 CAL DATE: 4-APR-2006	MS ISOTOPE : U-238 MSD ISOTOPE: U-238 LCS ISOTOPE: U-238 TRACER ISOTOPE: U232 LIB FILE : ENV_ALPHA_UU.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	24.840	2.160	100.0000	7.75E-01	3.38E-01	3.07E-01	3.21E-01
U232	5302.100	369.880	9.120	100.0000	1.16E+01	1.98E+00	5.32E-01	1.20E+00
U-235	4391.000	0.320	1.680	80.90000	1.23E-02	1.17E-01	3.48E-01	1.17E-01
U-238	4184.730	47.800	1.200	100.0000	1.49E+00	4.75E-01	2.53E-01	4.30E-01

REVIEWED BY: DATE : 04/11/06

04/10/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 517155
SAMPLE DATE : 11-MAR-2006 00:00:00

SAMPLE ID : S0158438005_UU
SAMPLE QTY: 0.213 G

DETECTOR NUMBER :28239
AVERAGE %EFFICIENCY :32.8288
% YIELD : 84.467

COUNT DATE: 8-APR-2006 15:43:20
ELAPSED LIVE TIME(SEC): 14400.00
ANALYST :LCW1

MS : 0858-B
MSD : 0858-B
LCS : 0858-B
TRACER : 0688-H
BKG FILE: B077.CNF;598
BKG DATE: 2-APR-2006

MS PCI/G : 12.34435
MSD PCI/G : 12.34435
LCS PCI/G : 12.34435
TRACER DPM : 5.4123
EFF FILE : W077.CNF;164
CAL DATE: 3-APR-2006

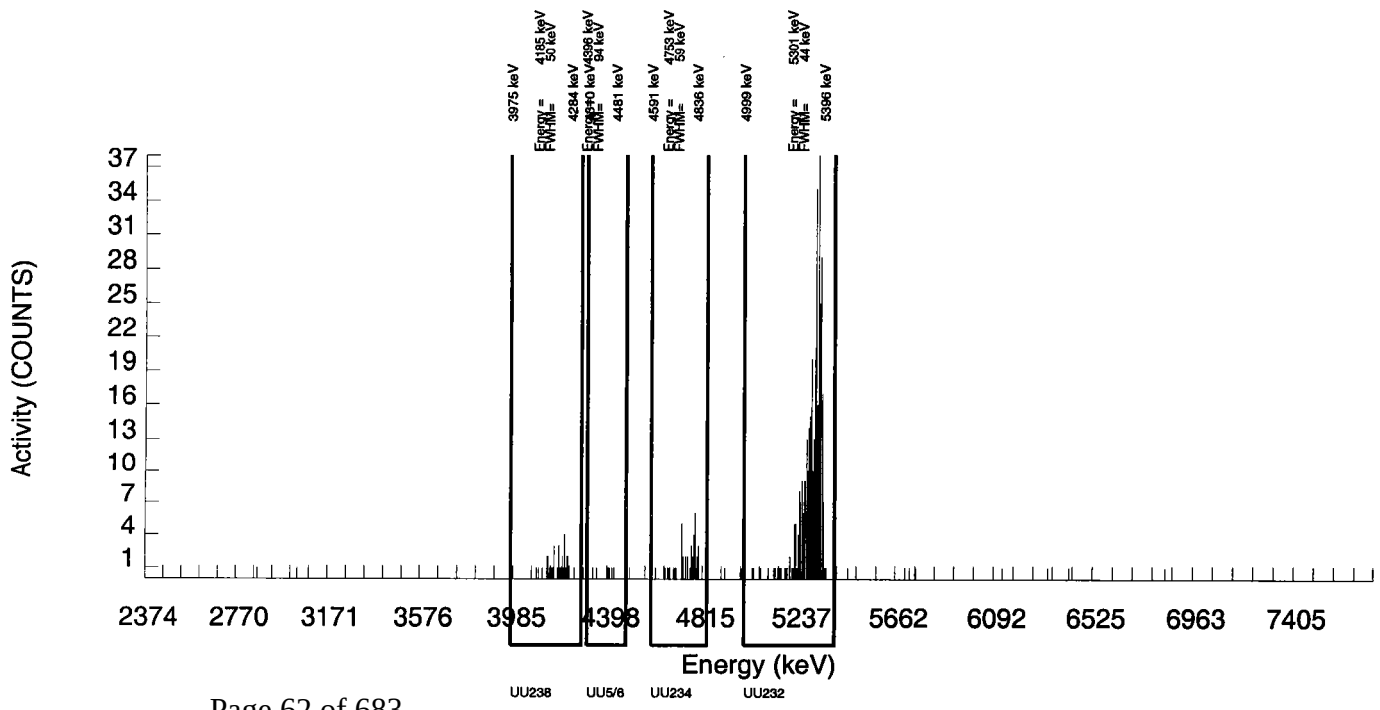
MS ISOTOPE : U-238
MSD ISOTOPE: U-238
LCS ISOTOPE: U-238
TRACER ISOTOPE: U232
LIB FILE : ENV_ALPHA_UU.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	38.360	2.640	100.0000	1.22E+00	4.35E-01	3.35E-01	4.02E-01
U232	5302.100	359.920	4.080	100.0000	1.14E+01	1.97E+00	3.94E-01	1.19E+00
U-235	4391.000	5.040	0.960	80.90000	1.98E-01	1.94E-01	2.97E-01	1.92E-01
U-238	4184.730	30.800	1.200	100.0000	9.79E-01	3.78E-01	2.57E-01	3.54E-01

REVIEWED BY:

DATE :



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 517155 SAMPLE DATE : 6-APR-2006 00:00:00.	SAMPLE ID : S1201062931_UU SAMPLE QTY: 0.231 G
DETECTOR NUMBER :34425 AVERAGE %EFFICIENCY :32.6623 % YIELD : 93.135	COUNT DATE: 8-APR-2006 15:43:20 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :LCW1

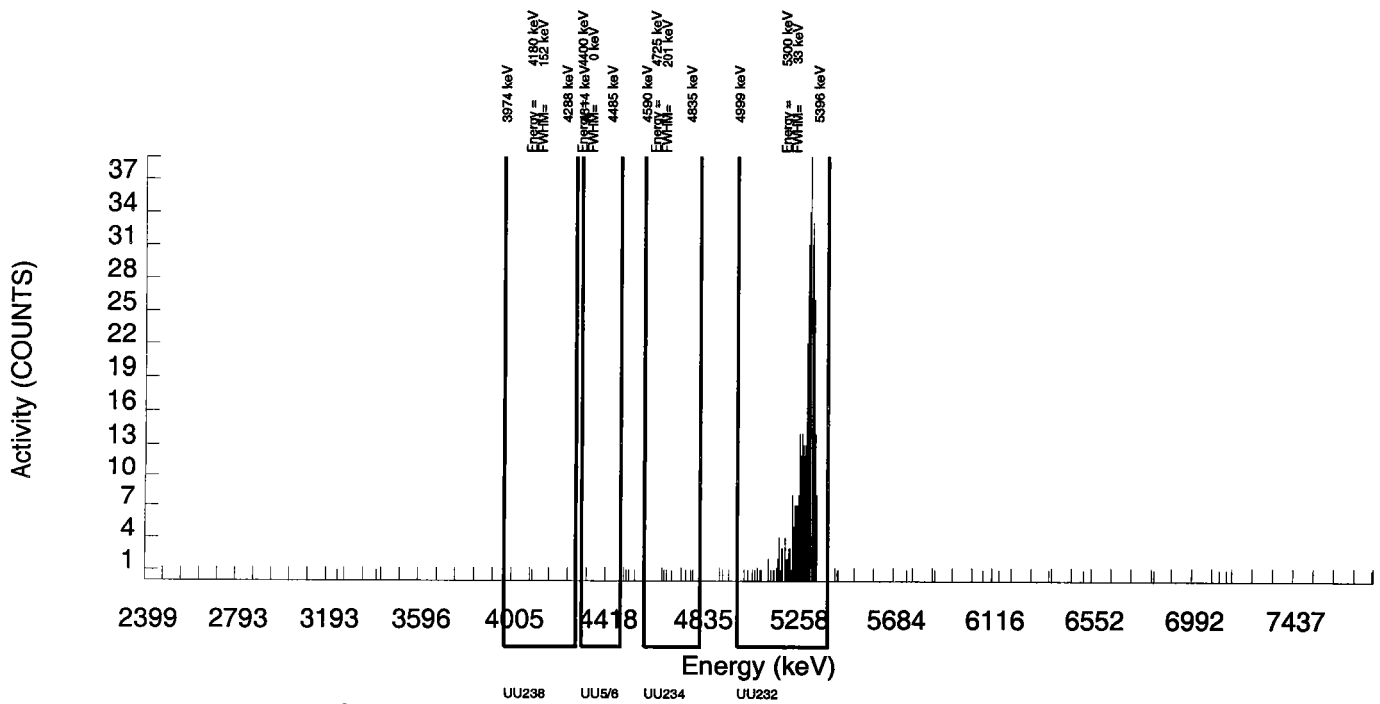
MS : 0858-B MSD : 0858-B LCS : 0858-B TRACER : 0688-H BKG FILE: B078.CNF;598 BKG DATE: 2-APR-2006	MS PCI/G : 11.38245 MSD PCI/G : 11.38245 LCS PCI/G : 11.38245 TRACER DPM : 5.4086 EFF FILE : W078.CNF;154 CAL DATE: 3-APR-2006	MS ISOTOPE : U-238 MSD ISOTOPE: U-238 LCS ISOTOPE: U-238 TRACER ISOTOPE: U232 LIB FILE : ENV_ALPHA_UU.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	5.560	1.440	100.0000	1.49E-01	1.43E-01	2.29E-01	1.42E-01
U232	5302.100	394.840	2.160	100.0000	1.05E+01	1.74E+00	2.63E-01	1.04E+00
U-235	4391.000	-0.720	0.720	80.90000	-2.38E-02	2.71E-02	2.29E-01	2.69E-02
U-238	4184.730	1.520	0.480	100.0000	4.06E-02	7.63E-02	1.66E-01	7.61E-02

REVIEWED BY: DATE : 04/11/06

04/11/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 517155	SAMPLE ID : S1201062932_UU
SAMPLE DATE : 10-MAR-2006 00:00:00	SAMPLE QTY: 0.205 G
DETECTOR NUMBER :28408	COUNT DATE: 8-APR-2006 15:43:20
AVERAGE %EFFICIENCY :33.8151	ELAPSED LIVE TIME(SEC): 14400.00
% YIELD : 69.062	ANALYST :LCW1

MS : 0858-B	MS PCI/G : 12.82608	MS ISOTOPE : U-238
MSD : 0858-B	MSD PCI/G : 12.82608	MSD ISOTOPE: U-238
LCS : 0858-B	LCS PCI/G : 12.82608	LCS ISOTOPE: U-238
TRACER : 0688-H	TRACER DPM : 5.4124	TRACER ISOTOPE: U232
BKG FILE: B079.CNF;596	EFF FILE : W079.CNF;154	LIB FILE : ENV_ALPHA_UU.N
BKG DATE: 2-APR-2006	CAL DATE: 3-APR-2006	

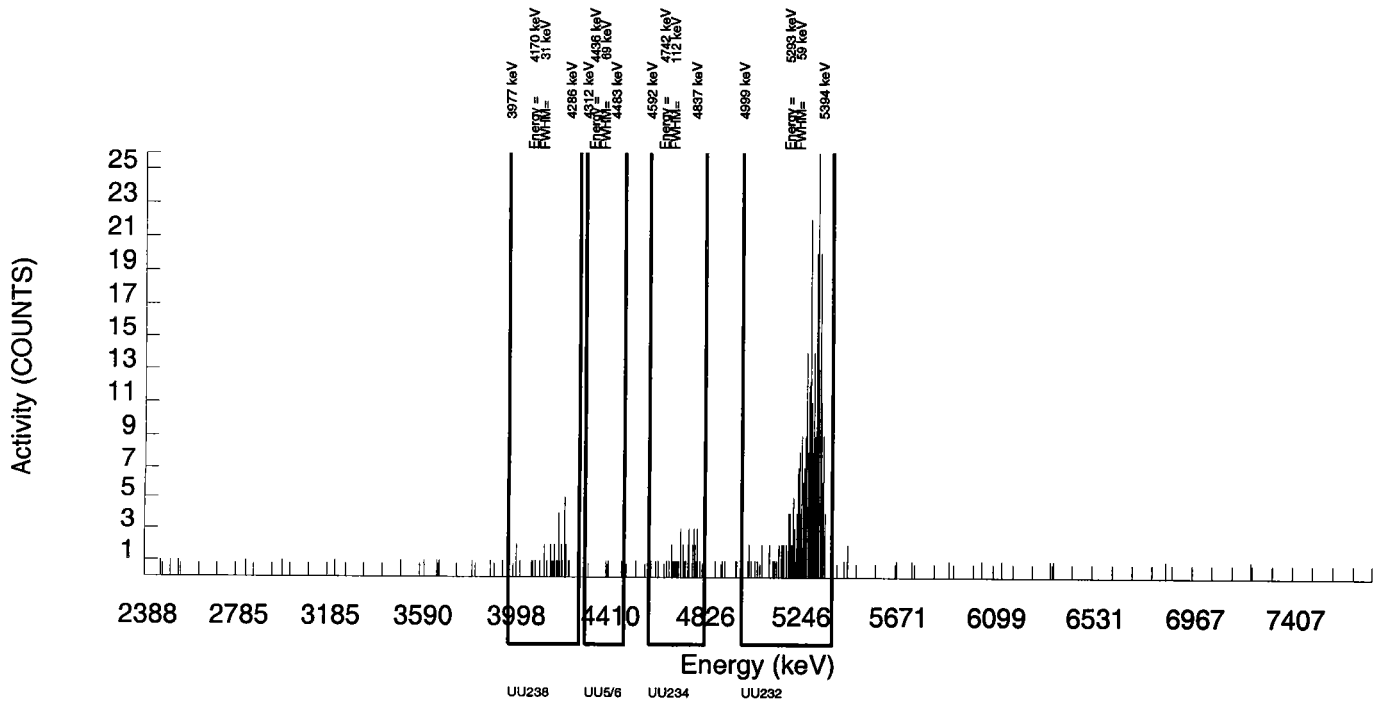
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	37.040	0.960	100.0000	1.45E+00	5.19E-01	2.96E-01	4.75E-01
U232	5302.100	303.120	2.880	100.0000	1.19E+01	2.18E+00	4.27E-01	1.35E+00
U-235	4391.000	2.520	0.480	80.90000	1.22E-01	1.69E-01	3.01E-01	1.68E-01
U-238	4184.730	34.560	1.440	100.0000	1.35E+00	5.03E-01	3.36E-01	4.63E-01

REVIEWED BY: DATE :

RPD 4/10/06

RPD
U34 = 57.3 ACTC SXMDA
U-235 = 28.2 ACTC SXMDA
U-238 = 10.9



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 517155 SAMPLE DATE : 10-MAR-2006 00:00:00	SAMPLE ID : S1201062933_UU SAMPLE QTY: 0.203 G
DETECTOR NUMBER :29269 AVERAGE %EFFICIENCY :34.1362 % YIELD : 79.752	COUNT DATE: 8-APR-2006 15:43:20 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :LCW1

MS : 0858-B MSD : 0858-B LCS : 0858-B TRACER : 0688-H BKG FILE: B080.CNF;599 BKG DATE: 2-APR-2006	MS PCI/G : 12.95245 MSD PCI/G : 12.95245 LCS PCI/G : 12.95245 TRACER DPM : 5.4124 EFF FILE : W080.CNF;153 CAL DATE: 3-APR-2006	MS ISOTOPE : U-238 MSD ISOTOPE: U-238 LCS ISOTOPE: U-238 TRACER ISOTOPE: U232 LIB FILE : ENV_ALPHA_UU.N

NUCLIDE ACTIVITY SUMMARY

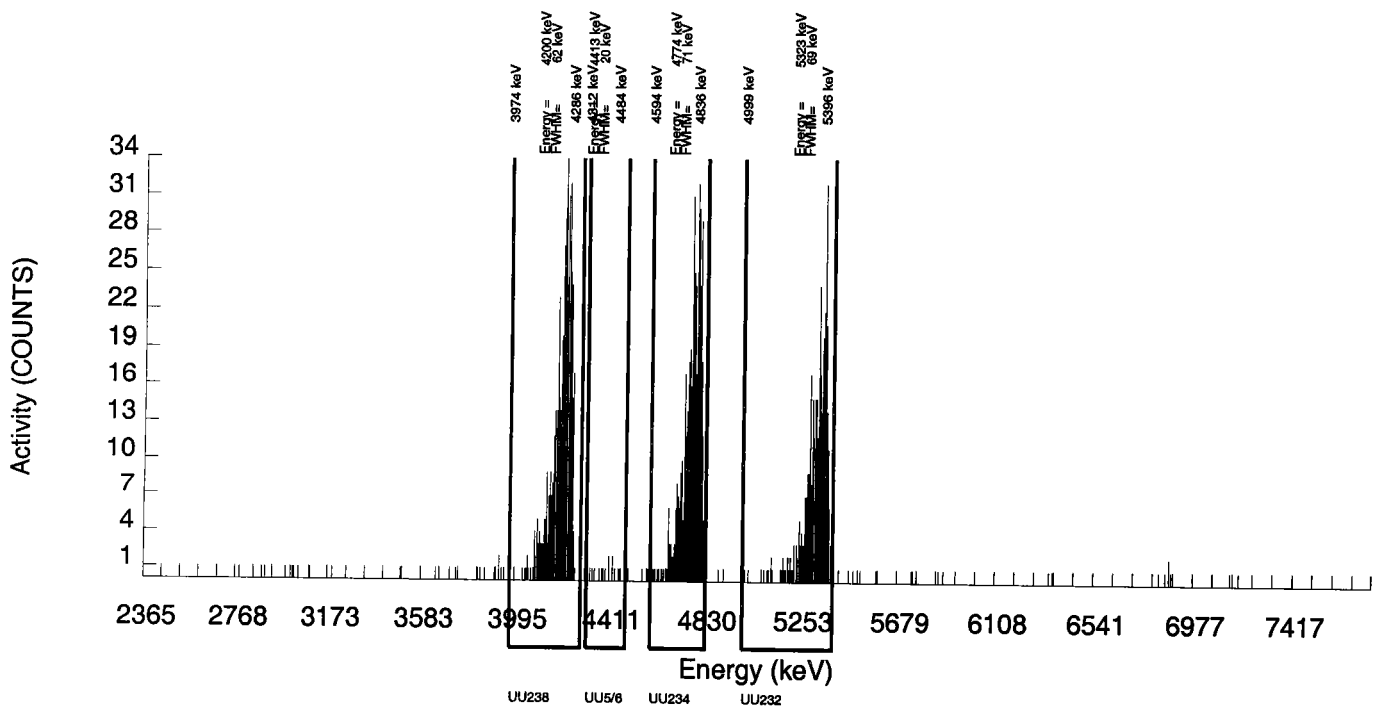
NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	423.320	1.680	100.0000	1.44E+01	2.41E+00	3.07E-01	1.37E+00
U232	5302.100	353.360	2.640	100.0000	1.20E+01	2.08E+00	3.59E-01	1.26E+00
U-235	4391.000	13.760	0.240	80.90000	5.78E-01	3.19E-01	2.22E-01	3.08E-01
U-238	4184.730	462.800	1.200	100.0000	1.57E+01	2.59E+00	2.75E-01	1.43E+00

REVIEWED BY: DATE : 4/11/06

4/10/06

MS = 13.7 − 1.221 / 13.0 = 111%

4/11/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 517155 SAMPLE DATE : 6-APR-2006 00:00:00.	SAMPLE ID : S1201062934_UU SAMPLE QTY: 0.231 G
DETECTOR NUMBER :28243 AVERAGE %EFFICIENCY :27.0915 % YIELD : 94.586	COUNT DATE: 8-APR-2006 15:43:20 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :LCW1

MS : 0858-B MSD : 0858-B LCS : 0858-B TRACER : 0688-H BKG FILE: B081.CNF;603 BKG DATE: 2-APR-2006	MS PCI/G : 11.38245 MSD PCI/G : 11.38245 LCS PCI/G : 11.38245 TRACER DPM : 5.4086 EFF FILE : W081.CNF;154 CAL DATE: 5-APR-2006	MS ISOTOPE : U-238 MSD ISOTOPE: U-238 LCS ISOTOPE: U-238 TRACER ISOTOPE: U232 LIB FILE : ENV_ALPHA_UU.N

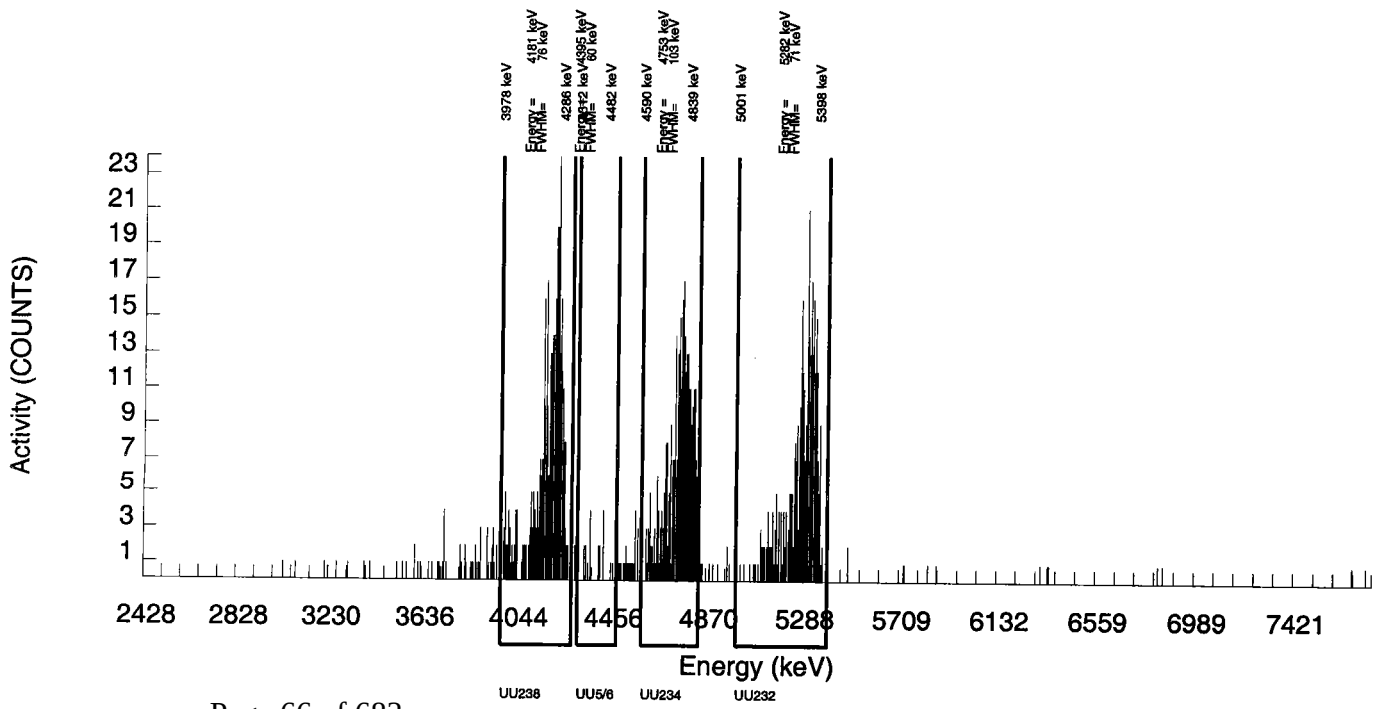
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	317.520	0.480	100.0000	1.01E+01	1.79E+00	1.97E-01	1.11E+00
U232	5302.100	332.600	2.400	100.0000	1.05E+01	1.86E+00	3.24E-01	1.14E+00
U-235	4391.000	21.280	0.720	80.90000	8.34E-01	3.80E-01	2.72E-01	3.62E-01
U-238	4184.730	366.800	1.200	100.0000	1.16E+01	2.01E+00	2.57E-01	1.19E+00

REVIEWED BY: RDH 4/10/06

DATE : PJH 04/11/06

LCS $\frac{11.6}{11.4} < 102\%$



Radiochemistry Batch Checklist, Rev 4

Batch# 513807 Product: 9S/MWHL Date: 4/14/06

Criteria:	Yes	No	Comments
Sample Solids are less than 100 mg for GAB.			N/A
If activity less 10* MDA, error is 150% or less of sample activity. If greater 10* MDA, error is 40% or less. If below the MDA, error is okay.	✓		
Instrument source check is within limits. Instument bkg check is within limits.	✓		
Method RDL has been met.	✓		
If duplicate activities are less 5* MDA, then rpd is 100% or less. If greater 5* MDA, then rpd 20% or less. If below the MDA, the rpd is 0%. Or meets the client's required RER acceptance criteria.	✓		
Tracer yield is 15-125% . Carrier yield 25-125%. Or meets the client's contract acceptance criteria.			N/A
Method blank is less than the RDL. (If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time. Special requirements page checked	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms. All lineouts initialed and dated. No transcription errors are apparent.	✓		
QC data entered into QC database. Batch entered into Case Narrative.	✓		
Batch non-conformances completed If applicable.			N/A

General Engineering Laboratories

2/22/2005

Primary Review Performed By: [signature] 4/14/06

Secondary Review Performed By: [signature] 4/14/06

Gamma Spec Que Sheet

Ingrow Until 4/1

03/22/2006

Batch #:513807 **Analyst: MJH1** **Minimum DueDate: 04/09/2006**

Gamma Spike Isotope: Mixed Gamma **Spike Code:** N/A **Expiration Date:** N/A **Vol:** N/A **Nominal Concentration:** N/A

Gamma LCS Isotope: Mixed Gamma **LCS Code:** ICO781-A **Expiration Date:** 4/27/06 **Vol:** 1.0-L **Nominal Concentration:** CS137-9.283 0060 13.33

Initials: RM **Prep Date:** 3/25/06 4141-3106 **Witness:** N/A Am241-24.38

Sample ID	Client Description / Container ID	Type	Hazard Code	RDL	Client	Matrix	Collect Date	Aliquot (1 g F)	Detector	Sealing Date/Time (if Applicable)
158437001	2603150347 M119-0.5	SAMPLE		1 pCi/g	MWHL002	SOIL	14-MAR-06 07:30:00	128.64	14	3/25/06
158437002	2603150349 M119-0.5D	SAMPLE		1 pCi/g	MWHL002	SOIL	14-MAR-06 12:00:00	121.23	19	
158437003	2603150350 M119-5	SAMPLE		1 pCi/g	MWHL002	SOIL	14-MAR-06 07:35:00	121.00	14	
158437004	2603150352 M119-50	SAMPLE		1 pCi/g	MWHL002	SOIL	14-MAR-06 09:00:00	114.05	19	
158438001	2603150303 M116-0.5	SAMPLE		1 pCi/g	MWHL002	SOIL	11-MAR-06 11:55:00	149.62	14	
158438002	2603150304 M11600.5D	SAMPLE		1 pCi/g	MWHL002	SOIL	11-MAR-06 12:00:00	133.65	19	
158438003	2603150305 M116-5	SAMPLE		1 pCi/g	MWHL002	SOIL	11-MAR-06 12:05:00	120.05	16 17	
158438004	2603150307 M117-0.5	SAMPLE		1 pCi/g	MWHL002	SOIL	11-MAR-06 07:38:00	139.95	16	
158438005	2603150308 M117-5	SAMPLE		1 pCi/g	MWHL002	SOIL	11-MAR-06 07:48:00	124.33	HP	
1201055620	MB for batch 513807	MB		1 pCi/g	QC ACCOUNT	SOIL	3/25/06	149.62	9	
1201055621	2603150305 M116-5(158438003DUP)	DUP		1 pCi/g	QC ACCOUNT	SOIL	11-MAR-06 12:05:00	~~121.00~~ 120.05	16	
1201055622	LCS for batch 513807	LCS		1 pCi/g	QC ACCOUNT	SOIL	3/25/06	100.00	well	3/25/06

General Engineering Laboratories, Radiochemistry Division

Data Reviewed By: 4/14/06

4/14/06

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	Parmname	Result	MDA	RDL
513807	158437001	SAMPLE	13-APR-06				
513807	158437002	SAMPLE	13-APR-06				
513807	158437003	SAMPLE	13-APR-06				
513807	158437004	SAMPLE	13-APR-06				
513807	158438001	SAMPLE	14-APR-06				
513807	158438002	SAMPLE	14-APR-06				
513807	158438003	SAMPLE	14-APR-06				
513807	158438004	SAMPLE	14-APR-06				
513807	158438005	SAMPLE	14-APR-06				
513807	1201055620	MB	14-APR-06				
513807	1201055621	DUP	14-APR-06				
513807	1201055622	LCS	13-APR-06	Radium-228	0.8812	1.451	1.00

Result Greater Than MDA

Batch Id	Sample Id	Sample Type	Run Date	Parmname	Result	Uncertainty	Units	MDA	RDL
513807	158437001	SAMPLE	13-APR-06	Cadmium-115	220.1	932.5	pCi/g	0	N
				Cerium-143	2.539E+06	7.616E+05	pCi/g	0	N
				Gross Gamma	9.602	2.398	pCi/g	5.994	N
				Iodine-132	1.000E+41	6.252E+41	pCi/g	0	N
				Iodine-133	5.539E+08	9.192E+08	pCi/g	0	N
				Krypton-85 LA NR	22.94	5.703	pCi/g	5.64	N
				Lead-212 ✓	1.774	0.1625	pCi/g	0.03549	10.0
				Niobium-95m	127.7	33.17	pCi/g	0	N
				Potassium-40	24.11	1.814	pCi/g	0.1963	N
				Praseodymium-144	1.000E+41	4.477E+41	pCi/g	0	N
				Promethium-149	1542	7304	pCi/g	0	N
				Radium-226 ✓	0.9499	0.1321	pCi/g	0.04127	2.00
				Radium-228 ✓	1.754	0.2854	pCi/g	0.08358	1.00
				Tin-115 HE NR	8.498	5.982	pCi/g	3.256	N
513807	158437002	SAMPLE	13-APR-06	Cerium-143	1.395E+06	4.588E+05	pCi/g	0	N
				Iodine-132	1.000E+41	6.088E+41	pCi/g	0	N
				Krypton-85 LA NR	24.98	6.541	pCi/g	6.542	N
				Lead-212 ✓	1.647	0.161	pCi/g	0.04239	10.0
				Niobium-95m	114.7	34.88	pCi/g	0	N
				Potassium-40	21.62	1.741	pCi/g	0.2159	N
				Praseodymium-144	1.000E+41	4.439E+41	pCi/g	0	N
				Promethium-149	1749	7509	pCi/g	0	N
				Radium-226 ✓	1.074	0.1478	pCi/g	0.04162	2.00
				Radium-228 ✓	1.651	0.2684	pCi/g	0.08327	1.00
513807	158437003	SAMPLE	13-APR-06	Cadmium-115	259.7	960	pCi/g	0	N
				Cerium-143	2.655E+06	8.071E+05	pCi/g	0	N
				Gross Gamma	10.31	2.257	pCi/g	8.356	N
				Iodine-132	1.000E+41	5.815E+41	pCi/g	0	N
				Krypton-85 HE NR	17.37	6.134	pCi/g	5.797	N
				Lead-212 ✓	1.825	0.1664	pCi/g	0.03698	10.0
				Manganese-56	1.000E+41	1.364E+41	pCi/g	0	N
				Niobium-95m	105.3	33.57	pCi/g	0	N
				Potassium-40	24.87	1.883	pCi/g	0.2468	N
				Praseodymium-144	1.000E+41	2.553E+41	pCi/g	0	N
				Promethium-149	8679	11130	pCi/g	0	N
				Radium-226 ✓	0.986	0.1469	pCi/g	0.04416	2.00
				Radium-228 ✓	1.923	0.3064	pCi/g	0.08849	1.00

Result Greater Than MDA

Batch Id	Sample Id	Sample Type	Run Date	Parmname	Result	Uncertanty	Units	MDA	RDL
513807	158437003	SAMPLE	13-APR-06	Sodium-24	1.675E+13	1.497E+13	pCi/g	0	N
513807	158437004	SAMPLE	13-APR-06	Antimony-127	17.7	24.28	pCi/g	16.8	N
				Bismuth-211	6.415	0.6037	pCi/g	0.1548	N
				Cerium-143	5.251E+06	1.508E+06	pCi/g	0	N
				Gross Gamma	1.539E+24	3.063E+23	pCi/g	3.880E+23	N
				Iodine-132	1.000E+41	6.182E+41	pCi/g	0	N
				Iodine-133	3.618E+08	1.132E+09	pCi/g	0	N
				Krypton-85 HE NR	16.42	10.1	pCi/g	6.655	N
				Lead-212 ✓	1.822	0.1775	pCi/g	0.04297	10.0
				Manganese-56	1.000E+41	4.230E+41	pCi/g	0	N
				Niobium-95m	140.6	41.01	pCi/g	0	N
				Potassium-40	23.13	1.889	pCi/g	0.2099	N
				Praseodymium-144	1.000E+41	1.296E+41	pCi/g	0	N
				Promethium-149	3500	10140	pCi/g	0	N
				Radium-224	5.946	1.154	pCi/g	0.4888	N
				Radium-226 ✓	2.057	0.2243	pCi/g	0.05089	2.00
				Radium-228 ✓	1.841	0.3063	pCi/g	0.09928	1.00
				Tin-115 HE NR	10.46	4.278	pCi/g	4.224	N
513807	158438001	SAMPLE	14-APR-06	Cerium-143	7.432E+06	2.783E+06	pCi/g	0	N
				Gross Gamma	9.542	3.666	pCi/g	8.713	N
				Iodine-132	1.000E+41	6.442E+41	pCi/g	0	N
				Iodine-133	6.611E+09	1.502E+10	pCi/g	0	N
				Iodine-135	6.324E+35	1.178E+36	pCi/g	0	N
				Krypton-85 HE NR	19.6	7.282	pCi/g	7.171	N
				Lead-212 ✓	1.783	0.1739	pCi/g	0.04537	10.0
				Niobium-95m	173.3	73.21	pCi/g	0	N
				Potassium-40	22.03	1.923	pCi/g	0.2568	N
				Praseodymium-144	1.000E+41	5.285E+41	pCi/g	0	N
				Promethium-149	2041	27760	pCi/g	0	N
				Radium-226 ✓	0.7911	0.1327	pCi/g	0.05728	2.00
				Radium-228 ✓	1.781	0.3609	pCi/g	0.1026	1.00
513807	158438002	SAMPLE	14-APR-06	Cerium-143	1.451E+07	5.034E+06	pCi/g	0	N
				Gross Gamma	2.874E+31	9.080E+30	pCi/g	1.142E+31	N
				Iodine-135	1.131E+36	1.334E+36	pCi/g	0	N
				Krypton-85 HE NR	15.56	8.516	pCi/g	8.234	N
				Lead-212 ✓	1.911	0.1983	pCi/g	0.05486	10.0
				Niobium-95m	265.5	92.98	pCi/g	0	N

Result Greater Than MDA

Batch Id	Sample Id	Sample Type	Run Date	Parmname	Result	Uncertainty	Units	MDA	RDL
513807	158438002	SAMPLE	14-APR-06	Potassium-40	23.76	2.146	pCi/g	0.3009	N
				Praseodymium-144	1.000E+41	1.435E+41	pCi/g	0	N
				Radium-226	1.036	0.1712	pCi/g	0.06734	2.00
				Radium-228	1.98	0.3446	pCi/g	0.1218	1.00
				Tin-115	8.654	7.015	pCi/g	4.976	N
513807	158438003	SAMPLE	14-APR-06	Cerium-143	2.551E+06	1.704E+06	pCi/g	0	N
				Iodine-132	1.000E+41	2.000E+41	pCi/g	0	N
				Iodine-133	1.969E+09	2.183E+10	pCi/g	0	N
				Lead-212	1.517	0.118	pCi/g	0.08927	10.0
				Manganese-56	1.000E+41	2.000E+41	pCi/g	0	N
				Molybdenum-99	65.02	119.3	pCi/g	0	N
				Potassium-40	17.85	1.642	pCi/g	0.6644	N
				Radium-226	0.9069	0.19	pCi/g	0.1423	2.00
				Radium-228	1.345	0.3979	pCi/g	0.2801	1.00
				Sodium-24	2.654E+14	6.881E+14	pCi/g	0	N
				Technetium-99m	5.253E+38	9.640E+38	pCi/g	0	N
513807	158438004	SAMPLE	14-APR-06	Cadmium-115	1067	3233	pCi/g	0	N
				Cerium-143	1.497E+07	5.359E+06	pCi/g	0	N
				Gross Gamma	9.865	2.421	pCi/g	8.198	N
				Iodine-132	1.000E+41	6.561E+41	pCi/g	0	N
				Lead-212	1.849	0.2127	pCi/g	0.09784	10.0
				Potassium-40	23.78	2.281	pCi/g	0.5418	N
				Praseodymium-144	1.000E+41	7.021E+40	pCi/g	0	N
				Radium-226	0.8911	0.1549	pCi/g	0.1091	2.00
				Radium-228	1.921	0.3429	pCi/g	0.1863	1.00
				Technetium-99m	2.295E+37	1.570E+39	pCi/g	0	N
				Tellurium-132	28.04	37.98	pCi/g	0	N
513807	158438005	SAMPLE	14-APR-06	Antimony-127	31.12	27.87	pCi/g	0	N
				Cerium-143	1.377E+07	4.476E+06	pCi/g	0	N
				Gross Gamma	8.523	1.84	pCi/g	5.177	N
				Iodine-132	1.000E+41	6.895E+41	pCi/g	0	N
				Iodine-135	7.239E+34	1.376E+36	pCi/g	0	N
				Lead-212	1.596	0.1538	pCi/g	0.06963	10.0
				Molybdenum-99	65.22	116.1	pCi/g	0	N
				Niobium-95m	18.03	58.52	pCi/g	0	N
				Potassium-40	19.77	1.673	pCi/g	0.3386	N
				Promethium-149	3159	24680	pCi/g	0	N

Result Greater Than MDA

Batch Id	Sample Id	Sample Type	Run Date	Parmname	Result	Uncertainty	Units	MDA	RDL
513807	158438005	SAMPLE	14-APR-06	Protactinium-234m	5.096	4.729	pCi/g	4.6	N
				Radium-226	0.9397	0.1558	pCi/g	0.08432	2.00
				Radium-228	1.588	0.3212	pCi/g	0.1565	1.00
				Sodium-24	1.240E+14	5.162E+14	pCi/g	0	N
				Technetium-99m	8.275E+38	1.562E+39	pCi/g	0	N
513807	1201055620	MB	14-APR-06	Cadmium-115	5.663	27.83	pCi/g	0	N
				Cerium-143	142.5	874.3	pCi/g	0	N
				Iodine-132	1.000E+41	2.000E+41	pCi/g	0	N
				Praseodymium-144	1.000E+41	2.000E+41	pCi/g	0	N
513807	1201055621	DUP	14-APR-06	Antimony-127	14.41	33.31	pCi/g	0	N
				Cerium-143	1.321E+07	5.056E+06	pCi/g	0	N
				Gross Gamma	7.768	2.34	pCi/g	6.056	N
				Iodine-133	1.916E+10	1.846E+10	pCi/g	0	N
				Iodine-135	2.584E+35	1.748E+36	pCi/g	0	N
				Lead-212	1.507	0.183	pCi/g	0.09979	10.0
				Molybdenum-99	49.35	132.4	pCi/g	0	N
				Niobium-95m	45.11	75.72	pCi/g	0	N
				Potassium-40	18.65	2.021	pCi/g	0.5925	N
				Promethium-149	27620	32540	pCi/g	0	N
				Radium-226	0.8817	0.161	pCi/g	0.1132	2.00
				Radium-228	1.42	0.3281	pCi/g	0.2011	1.00
				Sodium-24	4.560E+13	6.655E+14	pCi/g	0	N
				Technetium-99m	5.100E+38	1.405E+39	pCi/g	0	N
				Tellurium-132	16.3	33.45	pCi/g	0	N
513807	1201055622	LCS	13-APR-06	Americium-241	22.8	1.08	pCi/g	0.7231	N
				Barium-137m	9.501	0.5943	pCi/g	0.3035	N
				Cadmium-109	187.2	7.088	pCi/g	4.632	N
				Cadmium-115	130.9	221.2	pCi/g	0	N
				Cerium-143	2284	4866	pCi/g	0	N
				Cesium-137	10.04	0.6282	pCi/g	0.3208	N
				Cobalt-60	13.98	0.8219	pCi/g	0.2846	N
				Gross Gamma	63.82	8.824	pCi/g	23.85	N
				Iodine-133	3.261E+05	1.189E+06	pCi/g	0	N
				Iodine-135	1.024E+21	3.754E+21	pCi/g	0	N
				Manganese-56	1.000E+41	2.000E+41	pCi/g	0	N
				Neptunium-237	54.67	2.07	pCi/g	1.565	N
				Promethium-147	6.472E+06	4.810E+05	pCi/g	7.566E+05	N

Result Greater Than MDA

Batch Id	Sample Id	Sample Type	Run Date	Parmname	Result	Uncertanty	Units	MDA	RDL
513807	1201055622	LCS	13-APR-06	Promethium-149	704.1	1535	pCi/g	0	N
				Sodium-24	1.693E+08	3.270E+08	pCi/g	0	N
				Tin-126	18.62	0.7048	pCi/g	0.5717	N

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 12:24:28.90

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA0:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438001.CNF;1
Sample date      : 11-MAR-2006 11:55:00 Acquisition date : 14-APR-2006 06:26:17
Sample ID        : G158438001           Sample quantity  : 1.49620E+02 GRAM
Detector name    : GAM14                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.57  0.0%
Energy tolerance : 2.00000 keV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513807               Detector SN#     :
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.57*	46	373	1.42	98.12	95	8	6.43E-03	75.2	0.00E+00
2	0	63.10*	49	554	1.81	132.88	129	9	6.82E-03	89.6	
3	3	74.92*	624	759	1.75	157.75	151	17	8.67E-02	10.0	2.93E+00
4	3	77.28*	812	487	1.14	162.71	151	17	1.13E-01	6.0	
5	3	87.34*	349	520	1.26	183.86	180	24	4.85E-02	11.9	3.11E+00
6	3	90.14	220	609	1.78	189.75	180	24	3.06E-02	23.7	
7	3	93.05*	300	501	1.71	195.88	180	24	4.17E-02	17.5	
8	0	99.56*	137	483	2.73	209.56	204	13	1.90E-02	34.4	
9	0	105.19	60	326	0.73	221.39	218	8	8.30E-03	53.8	
10	0	124.14*	52	381	3.30	261.26	257	9	7.21E-03	70.1	
11	0	129.19	185	497	1.69	271.88	267	12	2.58E-02	25.2	
12	0	145.60	58	606	2.59	306.40	297	16	8.08E-03	95.9	
13	0	185.83*	246	344	1.57	391.01	386	11	3.41E-02	16.4	
14	0	209.54	242	420	1.62	440.88	433	15	3.36E-02	19.6	
15	0	215.37	43	193	1.35	453.13	449	7	6.03E-03	55.3	
16	2	238.72*	1706	198	1.32	502.25	494	23	2.37E-01	2.9	1.53E+00
17	2	241.61	372	245	1.80	508.34	494	23	5.16E-02	12.2	
18	0	263.63	47	96	1.33	554.66	552	6	6.59E-03	36.0	
19	0	270.18	194	183	2.19	568.43	562	12	2.70E-02	15.7	
20	0	278.23	87	224	2.39	585.36	579	11	1.22E-02	34.9	
21	2	295.33	442	136	1.49	621.34	615	22	6.13E-02	6.6	2.09E+00
22	2	300.27	138	115	1.85	631.72	615	22	1.91E-02	18.2	
23	0	327.89	96	183	1.08	689.82	685	10	1.33E-02	28.4	
24	7	338.39	335	125	1.49	711.91	705	23	4.65E-02	8.1	9.74E-01
25	7	342.34	70	177	3.04	720.23	705	23	9.73E-03	48.0	
26	0	352.03	683	234	1.31	740.61	734	14	9.48E-02	6.1	
27	0	462.84*	105	124	1.73	973.73	967	13	1.46E-02	24.5	
28	0	479.92	26	137	2.24	1009.65	1001	17	3.66E-03	103.2	
29	0	511.01*	154	157	1.80	1075.06	1066	17	2.13E-02	22.6	
30	6	572.88	41	32	1.65	1205.24	1202	12	5.65E-03	26.8	1.56E+00
31	6	575.43	25	26	1.27	1210.61	1202	12	3.47E-03	38.6	
32	0	583.50*	467	150	1.59	1227.58	1220	17	6.49E-02	7.7	
33	0	609.67	391	99	1.67	1282.64	1277	11	5.43E-02	7.1	
34	0	661.99	38	62	1.94	1392.74	1388	9	5.31E-03	40.7	
35	0	670.94*	135	101	3.32	1411.57	1404	14	1.88E-02	18.5	
36	0	701.74	32	125	6.19	1476.38	1466	20	4.38E-03	88.7	
37	0	727.89*	111	88	1.05	1531.42	1525	14	1.54E-02	20.5	
38	0	746.80	21	58	2.83	1571.21	1563	11	2.94E-03	72.9	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	769.70	76	89	4.98	1619.40	1611	18	1.05E-02	31.5	
40	0	785.98	29	75	4.12	1653.66	1645	13	4.09E-03	63.2	
41	1	831.46	36	61	2.00	1749.38	1742	21	4.99E-03	46.0	4.89E+00
42	1	834.13	27	49	1.82	1755.00	1742	21	3.73E-03	56.0	
43	0	861.57	66	58	2.82	1812.74	1806	13	9.15E-03	26.9	
44	0	912.01*	359	97	1.73	1918.91	1911	18	4.99E-02	8.4	
45	3	964.76*	60	39	2.49	2029.93	2023	27	8.29E-03	28.8	2.78E+00
46	3	969.48	205	48	2.06	2039.88	2023	27	2.84E-02	9.9	
47	0	998.41	14	20	1.31	2100.77	2098	6	1.93E-03	57.1	
48	0	1005.58	16	20	1.42	2115.86	2113	7	2.27E-03	51.1	
49	1	1062.85	27	15	2.10	2236.40	2233	22	3.76E-03	30.6	1.90E+00
50	1	1069.11	24	26	2.11	2249.60	2233	22	3.28E-03	48.5	
51	0	1121.67	123	65	2.11	2360.23	2352	18	1.71E-02	18.0	
52	0	1170.43	16	31	0.70	2462.88	2457	9	2.26E-03	60.6	
53	0	1239.84	31	88	0.71	2609.02	2599	16	4.31E-03	70.0	
54	0	1303.97	43	15	0.65	2744.03	2737	14	5.92E-03	25.6	
55	0	1312.85	10	27	1.28	2762.75	2756	10	1.41E-03	101.3	
56	0	1328.18	15	68	5.41	2795.01	2775	27	2.08E-03	161.1	
57	0	1335.14	23	18	4.34	2809.68	2801	15	3.20E-03	45.7	
58	0	1378.76	39	14	1.89	2901.51	2893	15	5.37E-03	27.0	
59	0	1461.70*	1132	23	2.14	3076.17	3065	23	1.57E-01	3.2	
60	0	1487.74	15	7	3.24	3131.00	3122	14	2.08E-03	45.5	
61	0	1512.25	37	7	5.94	3182.62	3175	16	5.14E-03	23.6	
62	0	1564.53	15	4	1.57	3292.72	3288	9	2.07E-03	36.2	
63	0	1589.30*	26	13	1.78	3344.90	3337	13	3.56E-03	36.7	
64	0	1593.69	10	16	1.06	3354.14	3350	10	1.35E-03	81.9	
65	0	1617.42	9	11	0.63	3404.11	3398	11	1.25E-03	78.8	
66	0	1623.18	4	15	1.00	3416.25	3408	10	5.56E-04	187.9	
67	0	1632.06*	13	15	2.25	3434.96	3425	15	1.75E-03	75.2	
68	0	1661.50	16	3	1.57	3496.97	3490	12	2.20E-03	33.3	
69	0	1731.44	22	14	2.54	3644.28	3636	14	3.11E-03	41.2	
70	0	1765.76*	75	13	1.98	3716.57	3710	13	1.04E-02	15.6	
71	0	1907.33	7	2	1.25	4014.80	4010	9	9.72E-04	53.6	
72	0	1910.28	6	0	1.37	4021.00	4018	7	8.33E-04	40.8	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 12:24:29.53

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*********************************************************************
*                          GENERAL ENG. LABS, LLC.                  *
*                              2040 Savage Road                     *
*                            Charleston, SC 29414                   *
*********************************************************************
Configuration    : DKA0:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438001.CNF;1
Sample date      : 11-MAR-2006 11:55:00 Acquisition date : 14-APR-2006 06:26:17
Sample ID        : G158438001           Sample quantity  : 1.49620E+02 GRAM
Detector name    : GAM14                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.57  0.0%
Energy tolerance : 2.00000 keV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513807               Detector SN#     :
Matrix Spike DPM :                      LCS DPM          :
*********************************************************************
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	1132	10.67*	1.208E+00	2.203E+01	2.203E+01	8.73
MN-54	834.83	27	99.83*	2.011E+00	3.356E-02	3.618E-02	112.31
CD-109	88.03	349	3.79*	7.365E+00	3.139E+00	3.302E+00	25.85
SN-126	64.28	49	9.60	4.795E+00	2.677E-01	2.677E-01	179.77
	86.94	349	8.90	7.365E+00	1.337E+00	1.337E+00	48.00
	87.57	349	37.00*	7.365E+00	3.216E-01	3.216E-01	25.85
CS-135	268.24	194	16.00*	5.101E+00	5.973E-01	5.973E-01	32.38
BA-137M	661.65	38	89.98*	2.490E+00	4.280E-02	4.289E-02	81.74
CS-137	661.66	38	85.12*	2.490E+00	4.524E-02	4.534E-02	81.74
CE-141	145.44	58	48.40*	7.439E+00	4.053E-02	8.336E-02	191.92
EU-155	86.54	349	30.90	7.365E+00	3.851E-01	3.901E-01	25.88
	105.31	60	20.70*	7.886E+00	9.188E-02	9.308E-02	107.86
HG-203	70.83	------	4.75	5.911E+00	------ Line Not Found		------
	72.87	------	8.00	6.157E+00	------ Line Not Found		------
	82.60	------	3.55	7.066E+00	------ Line Not Found		------
	279.20	87	77.30*	4.994E+00	5.687E-02	9.403E-02	70.08
TL-208	75.00	624	3.43	6.385E+00	7.152E+00	7.396E+00	23.60
	277.35	87	6.80	4.994E+00	6.465E-01	6.686E-01	70.61
	510.84	154	21.60	3.116E+00	5.726E-01	5.922E-01	46.40
	583.14	467	84.20*	2.784E+00	5.002E-01	5.173E-01	17.28
	763.30	------	1.64	2.186E+00	------ Line Not Found		------
	860.37	66	12.46	1.950E+00	6.801E-01	7.033E-01	54.60
	1093.90	------	0.37	1.555E+00	------ Line Not Found		------
BI-210	46.50	46	4.05*	1.822E+00	1.575E+00	1.579E+00	150.66
PB-210	46.50	46	4.05*	1.822E+00	1.575E+00	1.579E+00	150.66
BI-211	351.07	683	12.94*	4.192E+00	3.157E+00	3.157E+00	13.94
BI-212	727.18	111	11.80*	2.284E+00	1.032E+00	1.068E+00	42.14
PB-212	74.80	624	10.70	6.385E+00	2.293E+00	2.371E+00	23.82
	87.30	349	8.00	7.365E+00	1.487E+00	1.538E+00	27.71
	115.19	------	0.60	7.902E+00	------ Line Not Found		------
	238.63	1706	44.60*	5.567E+00	1.724E+00	1.783E+00	9.75
	300.09	138	3.41	4.723E+00	2.144E+00	2.217E+00	37.34

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
BI-214	609.31	391	46.30*	2.679E+00	7.910E-01	7.911E-01	16.78
	768.36	76	5.04	2.169E+00	1.740E+00	1.740E+00	63.83
	934.06	------	3.21	1.806E+00	------ Line Not Found		------
	1120.29	123	15.10	1.519E+00	1.349E+00	1.349E+00	37.21
	1238.11	31	5.94	1.386E+00	9.445E-01	9.445E-01	140.26
	1377.67	39	4.11	1.266E+00	1.867E+00	1.867E+00	54.67
PB-214	74.81	624	6.21	6.385E+00	3.950E+00	3.950E+00	23.13
	77.11	812	10.50	6.622E+00	2.930E+00	2.930E+00	16.90
	87.30	349	4.41	7.365E+00	2.698E+00	2.698E+00	27.11
	241.98	372	7.50	5.521E+00	2.252E+00	2.252E+00	25.90
	295.21	442	19.20	4.781E+00	1.207E+00	1.207E+00	16.01
	351.92	683	37.20*	4.192E+00	1.098E+00	1.098E+00	14.89
RA-226	295.21	442	19.20	4.781E+00	1.207E+00	1.207E+00	16.01
	351.92	683	37.20	4.192E+00	1.098E+00	1.098E+00	13.67
	609.31	391	46.30*	2.679E+00	7.910E-01	7.911E-01	16.78
AC-228	209.25	242	4.40	6.079E+00	2.271E+00	2.296E+00	75.01
	338.32	335	11.40	4.320E+00	1.705E+00	1.724E+00	43.92
	463.01	105	4.40	3.381E+00	1.768E+00	1.788E+00	54.44
	794.95	------	4.60	2.104E+00	------ Line Not Found		------
	911.21	359	27.70*	1.848E+00	1.761E+00	1.781E+00	20.27
	964.77	60	5.20	1.751E+00	1.645E+00	1.664E+00	62.58
	969.11	205	16.60	1.743E+00	1.775E+00	1.795E+00	30.45
RA-228	209.25	242	4.40	6.079E+00	2.271E+00	2.296E+00	75.01
	338.32	335	11.40	4.320E+00	1.705E+00	1.724E+00	43.92
	463.01	105	4.40	3.381E+00	1.768E+00	1.788E+00	54.44
	794.95	------	4.60	2.104E+00	------ Line Not Found		------
	911.21	359	27.70*	1.848E+00	1.761E+00	1.781E+00	20.27
	964.77	60	5.20	1.751E+00	1.645E+00	1.664E+00	62.58
	969.11	205	16.60	1.743E+00	1.775E+00	1.795E+00	30.45
TH-228	84.40	------	1.21	7.189E+00	------ Line Not Found		------
	238.60	1706	44.60*	5.567E+00	1.724E+00	1.783E+00	9.75
	300.10	138	3.41	4.723E+00	2.144E+00	2.217E+00	69.28
TH-229	85.43	349	16.50	7.365E+00	7.211E-01	7.211E-01	25.85
	88.47	349	27.10	7.365E+00	4.391E-01	4.391E-01	25.85
	100.00	137	12.40	7.805E+00	3.547E-01	3.547E-01	69.36
	193.63	------	4.59*	6.394E+00	------ Line Not Found		------
	210.97	242	3.26	6.079E+00	3.061E+00	3.061E+00	39.71
TH-230	295.21	442	19.20	4.781E+00	1.207E+00	1.207E+00	16.01
	351.92	683	37.20	4.192E+00	1.098E+00	1.098E+00	13.67
	609.31	391	46.30*	2.679E+00	7.910E-01	7.910E-01	16.78
TH-232	238.59	1706	44.60*	5.567E+00	1.724E+00	1.724E+00	9.75
	911.20	359	27.70	1.848E+00	1.761E+00	1.761E+00	20.27
	964.40	60	5.20	1.751E+00	1.645E+00	1.645E+00	62.58
	969.11	205	16.60	1.743E+00	1.775E+00	1.775E+00	30.45
TH-234	63.29	49	3.80*	4.795E+00	6.763E-01	6.763E-01	180.03
	92.38	300	5.41	7.623E+00	1.824E+00	1.824E+00	39.45
	112.81	------	0.24	7.910E+00	------ Line Not Found		------
U-234	67.67	------	0.37	5.489E+00	------ Line Not Found		------
	241.98	372	7.49	5.521E+00	2.255E+00	2.255E+00	25.90

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	295.21	442	19.20*	4.781E+00	1.207E+00	1.207E+00	16.01
	351.92	683	37.20	4.192E+00	1.098E+00	1.098E+00	14.89
U-235	89.95	220	2.70	7.505E+00	2.729E+00	2.729E+00	56.69
	93.35	300	4.50	7.623E+00	2.193E+00	2.193E+00	44.88
	105.00	60	2.10	7.886E+00	9.057E-01	9.057E-01	111.57
	143.76	58	10.50*	7.439E+00	1.868E-01	1.868E-01	192.52
	163.33	------	4.70	7.050E+00	------ Line Not Found		------
	185.71	246	54.00	6.557E+00	1.742E-01	1.742E-01	33.36
	205.31	------	5.00	6.161E+00	------ Line Not Found		------
NP-237	86.48	349	12.60*	7.365E+00	9.443E-01	9.443E-01	33.07
	95.87	------	2.60	7.715E+00	------ Line Not Found		------
U-238	63.29	49	3.80*	4.795E+00	6.763E-01	6.763E-01	180.03
AM-242	99.55	137	0.63	7.805E+00	6.982E+00	6.985E+00	69.36
	103.70	60	1.01*	7.886E+00	1.883E+00	1.884E+00	107.85
ANH-511	511.00	154	100.00*	3.116E+00	1.237E-01	1.237E-01	45.64

Nuclide Type: NATURAL

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-224	240.98	372	3.95*	5.521E+00	4.276E+00	4.422E+00	25.29

Flag: "*" = Keyline

Sample ID : G158438001 Acquisition date : 14-APR-2006 06:26:17

Total number of lines in spectrum	72	
Number of unidentified lines	23	
Number of lines tentatively identified by NID	49	68.06%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.203E+01	2.203E+01	0.192E+01	8.73	
MN-54	312.70D	1.08	3.356E-02	3.618E-02	4.063E-02	112.31	
CD-109	464.00D	1.05	3.139E+00	3.302E+00	0.854E+00	25.85	
SN-126	1.00E+05Y	1.00	3.216E-01	3.216E-01	0.831E-01	25.85	
CS-135	2.30E+06Y	1.00	5.973E-01	5.973E-01	1.934E-01	32.38	
BA-137M	30.17Y	1.00	4.280E-02	4.289E-02	3.506E-02	81.74	
CS-137	30.17Y	1.00	4.524E-02	4.534E-02	3.706E-02	81.74	
CE-141	32.50D	2.06	4.053E-02	8.336E-02	16.00E-02	191.92	
EU-155	4.96Y	1.01	9.188E-02	9.308E-02	10.04E-02	107.86	
HG-203	46.61D	1.65	5.687E-02	9.403E-02	6.590E-02	70.08	
TL-208	1.91Y	1.03	5.002E-01	5.173E-01	0.894E-01	17.28	
BI-210	22.26Y	1.00	1.575E+00	1.579E+00	2.380E+00	150.66	
PB-210	22.26Y	1.00	1.575E+00	1.579E+00	2.380E+00	150.66	
BI-211	7.04E+08Y	1.00	3.157E+00	3.157E+00	0.440E+00	13.94	
BI-212	1.91Y	1.03	1.032E+00	1.068E+00	0.450E+00	42.14	
PB-212	1.91Y	1.03	1.724E+00	1.783E+00	0.174E+00	9.75	
BI-214	1600.00Y	1.00	7.910E-01	7.911E-01	1.327E-01	16.78	
PB-214	1600.00Y	1.00	1.098E+00	1.098E+00	0.164E+00	14.89	
RA-226	1600.00Y	1.00	7.910E-01	7.911E-01	1.327E-01	16.78	
AC-228	5.75Y	1.01	1.761E+00	1.781E+00	0.361E+00	20.27	
RA-228	5.75Y	1.01	1.761E+00	1.781E+00	0.361E+00	20.27	
TH-228	1.91Y	1.03	1.724E+00	1.783E+00	0.174E+00	9.75	
TH-229	7340.00Y	1.00	4.391E-01	4.391E-01	1.135E-01	25.85	K
TH-230	7.70E+04Y	1.00	7.910E-01	7.910E-01	1.327E-01	16.78	
TH-232	1.41E+10Y	1.00	1.724E+00	1.724E+00	0.168E+00	9.75	
TH-234	4.47E+09Y	1.00	6.763E-01	6.763E-01	12.17E-01	180.03	
U-234	2.45E+05Y	1.00	1.207E+00	1.207E+00	0.193E+00	16.01	
U-235	7.04E+08Y	1.00	1.868E-01	1.868E-01	3.597E-01	192.52	
NP-237	2.14E+06Y	1.00	9.443E-01	9.443E-01	3.123E-01	33.07	
U-238	4.47E+09Y	1.00	6.763E-01	6.763E-01	12.17E-01	180.03	
AM-242	152.00Y	1.00	1.883E+00	1.884E+00	2.032E+00	107.85	
ANH-511	1.00E+09Y	1.00	1.237E-01	1.237E-01	0.565E-01	45.64	
			---------	---------			
	Total Activity :		5.254E+01	5.301E+01			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-224	1.91Y	1.03	4.276E+00	4.422E+00	1.118E+00	25.29	
			---------	---------			
	Total Activity :		4.276E+00	4.422E+00			

Grand Total Activity :	5.682E+01	5.743E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	124.14	52	381	3.30	261.26	257	9	7.21E-03	****	7.82E+00	T
0	129.19	185	497	1.69	271.88	267	12	2.58E-02	50.3	7.75E+00	
0	215.37	43	193	1.35	453.13	449	7	6.03E-03	****	5.97E+00	
0	263.63	47	96	1.33	554.66	552	6	6.59E-03	71.9	5.19E+00	T
0	327.89	96	183	1.08	689.82	685	10	1.33E-02	56.8	4.42E+00	T
7	342.34	70	177	3.04	720.23	705	23	9.73E-03	95.9	4.28E+00	T
0	479.92	26	137	2.24	1009.65	1001	17	3.66E-03	****	3.28E+00	
6	572.88	41	32	1.65	1205.24	1202	12	5.65E-03	53.7	2.83E+00	T
6	575.43	25	26	1.27	1210.61	1202	12	3.47E-03	77.1	2.82E+00	
0	670.94	135	101	3.32	1411.57	1404	14	1.88E-02	37.0	2.46E+00	T
0	701.74	32	125	6.19	1476.38	1466	20	4.38E-03	****	2.36E+00	T
0	746.80	21	58	2.83	1571.21	1563	11	2.94E-03	****	2.23E+00	T
0	785.98	29	75	4.12	1653.66	1645	13	4.09E-03	****	2.13E+00	
1	831.46	36	61	2.00	1749.38	1742	21	4.99E-03	92.0	2.02E+00	T
0	998.41	14	20	1.31	2100.77	2098	6	1.93E-03	****	1.69E+00	
0	1005.58	16	20	1.42	2115.86	2113	7	2.27E-03	****	1.68E+00	T
1	1062.85	27	15	2.10	2236.40	2233	22	3.76E-03	61.2	1.60E+00	T
1	1069.11	24	26	2.11	2249.60	2233	22	3.28E-03	97.0	1.59E+00	
0	1170.43	16	31	0.70	2462.88	2457	9	2.26E-03	****	1.46E+00	
0	1303.97	43	15	0.65	2744.03	2737	14	5.92E-03	51.2	1.33E+00	
0	1312.85	10	27	1.28	2762.75	2756	10	1.41E-03	****	1.32E+00	T
0	1328.18	15	68	5.41	2795.01	2775	27	2.08E-03	****	1.31E+00	
0	1335.14	23	18	4.34	2809.68	2801	15	3.20E-03	91.5	1.30E+00	
0	1487.74	15	7	3.24	3131.00	3122	14	2.08E-03	90.9	1.19E+00	T
0	1512.25	37	7	5.94	3182.62	3175	16	5.14E-03	47.2	1.18E+00	
0	1564.53	15	4	1.57	3292.72	3288	9	2.07E-03	72.5	1.15E+00	
0	1589.30	26	13	1.78	3344.90	3337	13	3.56E-03	73.3	1.14E+00	
0	1593.69	10	16	1.06	3354.14	3350	10	1.35E-03	****	1.14E+00	
0	1617.42	9	11	0.63	3404.11	3398	11	1.25E-03	****	1.12E+00	
0	1623.18	4	15	1.00	3416.25	3408	10	5.56E-04	****	1.12E+00	
0	1632.06	13	15	2.25	3434.96	3425	15	1.75E-03	****	1.12E+00	
0	1661.50	16	3	1.57	3496.97	3490	12	2.20E-03	66.7	1.11E+00	
0	1731.44	22	14	2.54	3644.28	3636	14	3.11E-03	82.5	1.08E+00	
0	1765.76	75	13	1.98	3716.57	3710	13	1.04E-02	31.3	1.07E+00	
0	1907.33	7	2	1.25	4014.80	4010	9	9.72E-04	****	1.03E+00	
0	1910.28	6	0	1.37	4021.00	4018	7	8.33E-04	81.6	1.03E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 12:24:30.92

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration    : DKA0:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438001.CNF;1 *
* Acquisition date : 14-APR-2006 06:26:17  Detector SN#    :            *
* Detector ID      : GAM14                 Sensitivity     : 3.00000    *
* Geometry         : CAN                   Energy tolerance: 2.00000    *
* Elapsed live time: 0 02:00:00.00         Abundance limit : 75.00000   *
* Elapsed real time: 0 02:00:01.57         Half life ratio : 8.00000    *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      : 11-MAR-2006 11:55:00  Nuclide Library : EPI        *
* Sample ID        : G158438001            Analyst initials: MJH1       *
* Batch Number     : 513807                Sample Quantity : 1.49620E+02 GRAM  *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
*                                                                       *
* CALIB. DATE/TIME : 17-FEB-2006 10:26:16.9MS Isotope      :            *
* MSD DPM          :                      MSD Isotope     :            *
* LCS DPM          :                      LCS Isotope     :            *
*************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.203E+01	1.923E+00	2.568E-01	1.532E-02	85.793
MN-54	3.618E-02	4.063E-02	2.968E-02	2.532E-03	1.219
CD-109	3.302E+00	8.535E-01	6.243E-01	6.208E-02	5.290
SN-126	3.216E-01	8.312E-02	6.098E-02	6.035E-03	5.273
CS-135	5.973E-01	1.934E-01	1.153E-01	9.471E-03	5.179
BA-137M	4.289E-02	3.506E-02	2.955E-02	2.305E-03	1.452
CS-137	4.534E-02	3.706E-02	3.123E-02	2.442E-03	1.452
CE-141	4.039E-03	1.625E-01	7.221E-02	4.616E-03	0.056
EU-155	7.481E-02	1.006E-01	8.426E-02	6.653E-03	0.888
HG-203	9.403E-02	6.590E-02	4.301E-02	2.936E-03	2.186
TL-208	5.173E-01	8.940E-02	2.762E-02	2.202E-03	18.730
BI-210	1.579E+00	2.380E+00	1.833E+00	1.388E-01	0.862
PB-210	1.579E+00	2.380E+00	1.833E+00	1.388E-01	0.862
BI-211	3.157E+00	4.402E-01	1.612E-01	1.085E-02	19.585
BI-212	1.068E+00	4.500E-01	2.306E-01	2.210E-02	4.630
PB-212	1.783E+00	1.739E-01	4.537E-02	3.580E-03	39.296
BI-214	7.911E-01	1.327E-01	5.728E-02	5.192E-03	13.809
PB-214	1.098E+00	1.635E-01	5.620E-02	4.784E-03	19.545

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-224	4.422E+00	1.118E+00	5.162E-01	3.353E-02	8.567
RA-226	7.911E-01	1.327E-01	5.728E-02	5.192E-03	13.809
AC-228	1.781E+00	3.609E-01	1.026E-01	1.155E-02	17.356
RA-228	1.781E+00	3.609E-01	1.026E-01	1.155E-02	17.356
TH-228	1.783E+00	1.739E-01	4.537E-02	3.579E-03	39.300
TH-229	4.391E-01	1.135E-01	4.268E-01	2.690E-02	1.029
TH-230	7.910E-01	1.327E-01	5.728E-02	5.192E-03	13.809
TH-232	1.724E+00	1.681E-01	4.387E-02	3.461E-03	39.301
TH-234	6.763E-01	1.217E+00	8.609E-01	1.551E-01	0.786
U-234	1.207E+00	1.933E-01	1.026E-01	9.225E-03	11.767
U-235	1.742E-01	5.811E-02	1.703E-01	2.800E-02	1.023
NP-237	9.443E-01	3.123E-01	1.845E-01	4.213E-02	5.119
U-238	6.763E-01	1.217E+00	8.609E-01	1.551E-01	0.786
AM-242	1.514E+00	2.037E+00	1.542E+00	1.225E-01	0.982
ANH-511	1.237E-01	5.645E-02	2.201E-02	1.474E-03	5.618

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.542E-01		3.944E-01	3.105E-01	2.266E-02	-0.497
NA-22	-1.381E-02		3.799E-02	3.459E-02	2.011E-03	-0.399
NA-24	-4.172E+08		2.907E+08	Half-Life too short		
AL-26	-3.477E-03		2.111E-02	1.961E-02	1.094E-03	-0.177
SC-46	2.640E-03		4.245E-02	4.120E-02	3.573E-03	0.064
V-48	-5.681E-02		1.310E-01	1.204E-01	9.869E-03	-0.472
CR-51	1.672E-01		4.983E-01	4.885E-01	3.402E-02	0.342
CO-56	-2.793E-02		3.871E-02	3.503E-02	3.000E-03	-0.797
MN-56	-1.000E+35		6.935E+34	Half-Life too short		
CO-57	1.447E-02		2.600E-02	2.191E-02	1.385E-03	0.660
CO-58	-1.344E-02		3.702E-02	3.473E-02	2.943E-03	-0.387
FE-59	-2.734E-02		1.066E-01	9.937E-02	7.947E-03	-0.275
CO-60	1.170E-02		5.407E-02	2.960E-02	1.612E-03	0.395
ZN-65	-1.598E-02		8.819E-02	7.030E-02	4.923E-03	-0.227
SE-75	4.667E-02	+	3.370E-02	3.910E-02	2.569E-03	1.194
KR-85	1.960E+01		7.282E+00	7.171E+00	4.818E-01	2.734
SR-85	1.223E-01		4.543E-02	4.473E-02	3.006E-03	2.734
Y-88	-8.006E-03		2.958E-02	2.694E-02	1.500E-03	-0.297
Y-91	1.202E-02		3.810E-02	3.676E-02	2.594E-03	0.327
NB-94	3.347E-02	+	5.947E-02	2.779E-02	2.225E-03	1.204
NB-95	3.111E-02		6.840E-02	5.997E-02	4.973E-03	0.519
NB-95M	1.733E-04		3.661E-05	Half-Life too short		
ZR-95	4.789E-02		7.858E-02	7.959E-02	7.288E-03	0.602
MO-99	-6.610E-05		6.316E-05	Half-Life too short		
TC-99M	-5.425E+32		5.452E+32	Half-Life too short		
RU-103	-7.548E-03		4.685E-02	4.387E-02	5.713E-03	-0.172
RH-106	-1.332E-01		2.867E-01	2.588E-01	1.947E-02	-0.515
RU-106	-3.054E-01		2.921E-01	2.483E-01	3.149E-02	-1.230

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AG-108M	4.038E-03		2.770E-02	2.664E-02	1.743E-03	0.152
AG-110M	-2.719E-02		3.989E-02	2.979E-02	2.400E-03	-0.913
SN-113	4.559E-03		4.338E-02	4.175E-02	2.544E-03	0.109
CD-115	-3.624E-05		1.498E-03	Half-Life too short		
SN-115	4.871E+00		4.166E+00	4.367E+00	3.718E-01	1.115
SN-117M	1.202E-01		1.312E-01	1.263E-01	7.757E-03	0.952
TE-123M	2.647E-02		2.895E-02	2.787E-02	1.733E-03	0.949
SB-124	1.785E-02		7.882E-02	7.919E-02	4.881E-03	0.225
SB-125	-4.106E-02		7.952E-02	7.330E-02	4.582E-03	-0.560
TE-125M	9.096E-01		1.111E+01	9.165E+00	8.631E-01	0.099
I-126	3.246E-01		7.298E-01	4.259E-01	3.333E-02	0.762
SB-126	1.538E-01		3.872E-01	3.621E-01	2.929E-02	0.425
SB-127	-3.652E-06		1.615E-05	Half-Life too short		
I-131	2.064E-01		4.954E-01	4.861E-01	3.373E-02	0.425
I-132	1.000E+35		3.221E+35	Half-Life too short		
TE-132	-6.002E-06		1.543E-05	Half-Life too short		
BA-133	1.349E-03		4.136E-02	3.451E-02	4.040E-03	0.039
I-133	6.611E+03		7.510E+03	Half-Life too short		
CS-134	9.242E-02		3.873E-02	4.281E-02	3.618E-03	2.159
I-135	6.324E+29		5.890E+29	Half-Life too short		
CS-136	1.458E-01		2.503E-01	2.520E-01	2.045E-02	0.579
CE-139	1.215E-02		2.902E-02	2.745E-02	1.683E-03	0.443
BA-140	-3.792E-01		6.127E-01	5.395E-01	1.766E-01	-0.703
LA-140	6.707E-02		2.352E-01	2.067E-01	1.172E-02	0.324
CE-143	7.432E+00		1.391E+00	Half-Life too short		
CE-144	-5.135E-02		2.132E-01	1.717E-01	2.469E-02	-0.299
PM-144	5.762E-03		3.045E-02	2.623E-02	2.097E-03	0.220
PR-144	1.000E+35		2.642E+35	Half-Life too short		
PM-146	4.784E-02		3.808E-02	3.880E-02	3.461E-03	1.233
ND-147	3.695E-01		1.511E+00	1.453E+00	2.036E-01	0.254
PM-147	1.749E+04		5.237E+04	4.367E+04	2.780E+03	0.400
PM-149	2.041E-03		1.388E-02	Half-Life too short		
EU-152	1.556E-01	+	1.497E-01	7.927E-02	5.457E-03	1.963
GD-153	8.695E-02		9.412E-02	6.099E-02	5.263E-03	1.426
EU-154	-3.844E-02		1.051E-01	9.564E-02	8.937E-03	-0.402
TB-160	3.800E-02		1.481E-01	1.461E-01	1.264E-02	0.260
TM-171	-2.563E+01		2.491E+01	1.969E+01	1.701E+00	-1.301
HF-181	4.777E-03		5.132E-02	4.249E-02	2.747E-03	0.112
TA-182	6.483E-03		1.927E-01	1.835E-01	1.117E-02	0.035
IR-192	-9.839E-03		3.294E-02	3.124E-02	2.000E-03	-0.315
BI-207	5.686E-02	+	3.505E-02	4.367E-02	3.287E-03	1.302
PB-211	-3.028E-01		8.492E-01	7.748E-01	4.830E-01	-0.391
RN-219	-2.066E-01		3.628E-01	3.343E-01	4.547E-02	-0.618
RA-223	-3.541E-01		6.655E-01	5.325E-01	8.898E-02	-0.665
AC-227	-3.362E-01		3.539E-01	3.267E-01	4.716E-02	-1.029
TH-227	-3.304E-01		3.491E-01	3.211E-01	5.509E-02	-1.029
PA-231	2.772E-01		1.474E+00	1.311E+00	1.847E-01	0.211
TH-231	7.027E-01	+	2.270E-01	1.807E-01	1.422E-02	3.889

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-233	2.270E-02		5.179E-02	5.110E-02	3.436E-03	0.444
PA-234	-3.110E-01		2.499E-01	2.037E-01	3.806E-02	-1.527
PA-234M	4.171E+00		6.632E+00	4.021E+00	3.810E-01	1.037
NP-239	4.379E-02		1.630E-01	1.546E-01	1.040E-02	0.283
AM-241	6.959E-02		1.160E-01	9.938E-02	9.383E-03	0.700
CM-247	-1.026E-02		3.207E-02	3.008E-02	1.743E-03	-0.341
CF-249	5.370E-03		3.404E-02	3.288E-02	1.889E-03	0.163
CF-251	6.057E-02		1.088E-01	1.088E-01	6.740E-03	0.557

```
*****************************************************************************
*                                                                           *
*                          General Engineering Labs, LLC                    *
*                                2040 SAVAGE ROAD                           *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID     : 513807                    SAMPLE ID  : G158438001        *
*   ANALYST      : MJH1                      DETECTOR   : GAM14             *
*   SAMPLE DATE  : 11-MAR-2006 11:55:00.00   COUNT TIME :    0 02:00:00.00   *
*   ANALYSIS DATE: 14-APR-2006 06:26:17.28   SAMPLE ALQT:  149.620 GRAM      *
*                                                                           *
*****************************************************************************
```

GROSS GAMMA ACTIVITY (pCi/GRAM)	: 9.542E+00
GROSS GAMMA ERROR (pCi/GRAM)	: 3.666E+00
GROSS GAMMA MDA (pCi/GRAM)	: 8.713E+00
GROSS GAMMA DLC (pCi/GRAM)	: 4.242E+00

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 12:24:50.89

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA0:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438002.CNF;1
Sample date      : 11-MAR-2006 12:00:00 Acquisition date : 14-APR-2006 06:28:08
Sample ID        : G158438002           Sample quantity  : 1.33650E+02 GRAM
Detector name    : GAM19                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.56  0.0%
Energy tolerance : 2.00000 keV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513807               Detector SN#     :
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	10	5.03*	214	194	1.60	9.85	6	15	2.97E-02	20.7	4.06E+00
2	10	7.08*	232	870	2.78	13.94	6	15	3.22E-02	29.5	
3	0	10.87*	3	550	0.56	21.50	20	5	4.34E-04	*****	
4	0	40.07	36	190	1.16	79.84	78	5	4.94E-03	61.0	
5	0	46.82*	38	319	1.37	93.31	90	8	5.25E-03	84.9	
6	0	63.56*	74	355	1.17	126.75	124	7	1.02E-02	45.7	
7	2	74.95	508	580	1.49	149.52	145	15	7.06E-02	9.8	1.28E+00
8	2	77.32*	684	418	1.17	154.24	145	15	9.50E-02	6.5	
9	1	87.34	219	489	1.35	174.27	163	29	3.04E-02	18.3	1.91E+00
10	1	90.13	162	496	1.49	179.84	163	29	2.26E-02	26.9	
11	1	93.08*	296	432	1.50	185.73	163	29	4.11E-02	15.6	
12	0	99.55	55	317	1.40	198.66	195	8	7.68E-03	57.4	
13	0	105.34	81	351	1.29	210.22	206	9	1.13E-02	42.9	
14	0	129.17	94	366	1.06	257.83	254	9	1.30E-02	38.2	
15	0	162.85	26	374	0.70	325.11	319	11	3.67E-03	142.9	
16	0	186.07*	167	354	1.51	371.50	366	11	2.32E-02	24.0	
17	0	209.00	145	374	1.36	417.30	412	12	2.01E-02	28.3	
18	0	213.89	62	374	3.56	427.08	423	13	8.57E-03	65.6	
19	3	238.66*	1518	180	1.35	476.58	469	20	2.11E-01	3.1	1.95E+00
20	3	241.50	319	237	2.01	482.24	469	20	4.44E-02	16.2	
21	0	270.20	140	204	1.62	539.59	533	13	1.94E-02	22.7	
22	0	277.60*	64	174	1.04	554.37	550	10	8.82E-03	41.8	
23	0	295.25	381	224	1.41	589.64	583	13	5.29E-02	9.6	
24	0	300.35	82	238	0.80	599.81	596	13	1.15E-02	39.9	
25	0	328.32	77	187	1.86	655.70	650	11	1.07E-02	36.2	
26	0	338.51	252	228	0.97	676.07	670	12	3.50E-02	13.5	
27	0	351.92	663	219	1.65	702.85	695	17	9.21E-02	6.4	
28	0	409.92	91	147	2.56	818.76	811	15	1.26E-02	31.1	
29	0	462.96	76	143	1.70	924.74	918	13	1.06E-02	34.4	
30	0	510.93*	125	126	1.72	1020.60	1014	14	1.74E-02	24.4	
31	0	549.11	15	73	0.54	1096.89	1090	9	2.02E-03	110.9	
32	0	568.83*	120	165	2.36	1136.30	1128	18	1.67E-02	27.3	
33	0	583.45*	482	99	1.42	1165.51	1159	14	6.69E-02	6.4	
34	0	609.57*	431	112	1.51	1217.71	1211	14	5.98E-02	7.2	
35	0	663.37	16	91	0.80	1325.23	1318	11	2.22E-03	118.4	
36	0	727.75*	102	69	0.75	1453.91	1449	12	1.42E-02	19.6	
37	0	756.09	28	72	0.81	1510.55	1503	13	3.82E-03	66.2	
38	0	760.99	26	42	1.57	1520.34	1516	9	3.62E-03	49.2	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	769.22	63	111	3.21	1536.78	1529	17	8.73E-03	40.4	
40	0	787.19*	46	80	1.49	1572.71	1566	15	6.36E-03	46.0	
41	0	795.80	82	71	2.34	1589.91	1581	18	1.13E-02	26.8	
42	0	836.91	18	62	1.05	1672.08	1666	10	2.52E-03	84.8	
43	0	862.07	54	85	2.35	1722.38	1712	14	7.56E-03	38.2	
44	0	911.74	345	45	1.70	1821.66	1813	18	4.79E-02	7.1	
45	0	934.53	42	53	1.93	1867.22	1858	15	5.88E-03	40.4	
46	2	965.21	68	36	2.30	1928.53	1923	24	9.42E-03	23.7	9.68E-01
47	2	969.75	174	48	1.89	1937.62	1923	24	2.42E-02	10.7	
48	0	1032.35	10	27	1.02	2062.76	2054	10	1.32E-03	107.9	
49	0	1121.18	121	75	1.78	2240.34	2231	19	1.69E-02	19.4	
50	0	1192.55	28	34	3.56	2383.03	2376	12	3.83E-03	43.4	
51	0	1240.35	60	77	2.25	2478.60	2469	20	8.29E-03	38.8	
52	0	1256.92	15	34	0.81	2511.74	2506	10	2.11E-03	78.5	
53	0	1285.10	56	63	8.25	2568.08	2553	28	7.80E-03	42.2	
54	0	1298.86	51	40	11.40	2595.58	2581	27	7.12E-03	37.2	
55	0	1379.81	20	38	2.17	2757.45	2749	20	2.84E-03	78.4	
56	0	1461.79*	1070	32	1.90	2921.39	2913	18	1.49E-01	3.3	
57	0	1503.35	8	11	0.86	3004.50	3000	10	1.08E-03	85.2	
58	0	1516.36	9	6	0.83	3030.51	3027	8	1.20E-03	60.2	
59	0	1589.55	29	24	1.85	3176.87	3171	13	4.09E-03	38.2	
60	0	1668.51	20	0	1.11	3334.80	3328	16	2.78E-03	22.4	
61	0	1765.39	75	6	1.71	3528.57	3520	15	1.04E-02	14.0	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

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*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438002   *
* Acquisition date : 14-APR-2006 06:28:08 Detector SN#    :             *
* Detector ID      : GAM19                Sensitivity     : 3.000       *
* Geometry         : CAN                  Energy tolerance: 2.000       *
* Elapsed live time:    0 02:00:00.00     Abundance limit : 75.000      *
* Elapsed real time:    0 02:00:01.56     Half life ratio :  8.000      *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      : 11-MAR-2006 12:00:00 Nuclide Library :             *
* Sample ID        : G158438002           Analyst initials: MJH1        *
* Batch Number     : 513807               Sample Quantity : 1.3365E+02 GRAM  *
* Recovery         :    1.00000           Carrier Weight :    0.00000   *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
* Standard Weight  :   0.00000                                          *
* CALIB. DATE/TIME : 16-FEB-2006 08:01:37 MS Isotope      :             *
* MSD DPM          :    0.000            MSD Isotope     :             *
* LCS DPM          :    0.000            LCS Isotope     :             *
* LCSD DPM         :    0.000            LCSD Isotope    :             *
*************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.376E+01	2.146E+00	3.009E-01	0.000E+00
CD-109	2.670E+00	1.002E+00	7.151E-01	0.000E+00
SN-126	2.600E-01	9.761E-02	6.994E-02	0.000E+00
CS-135	5.180E-01	2.397E-01	1.520E-01	0.000E+00
BA-137M	2.122E-02	5.026E-02	3.665E-02	0.000E+00
CS-137	2.243E-02	5.313E-02	3.874E-02	0.000E+00
EU-155	1.425E-01	1.361E-01	1.038E-01	0.000E+00
HG-203	8.219E-02	6.895E-02	4.994E-02	0.000E+00
TL-208	6.353E-01	9.329E-02	3.511E-02	0.000E+00
BI-210	2.073E+00	3.524E+00	2.896E+00	0.000E+00
PB-210	2.073E+00	3.524E+00	2.896E+00	0.000E+00
BI-211	3.699E+00	5.376E-01	1.921E-01	0.000E+00
BI-212	1.155E+00	4.630E-01	2.603E-01	0.000E+00
PB-212	1.911E+00	1.983E-01	5.486E-02	0.000E+00
BI-214	1.036E+00	1.712E-01	6.734E-02	0.000E+00
PB-214	1.287E+00	1.987E-01	6.696E-02	0.000E+00
RA-224	4.577E+00	1.521E+00	6.241E-01	0.000E+00
RA-226	1.036E+00	1.712E-01	6.734E-02	0.000E+00
AC-228	1.980E+00	3.446E-01	1.218E-01	0.000E+00
RA-228	1.980E+00	3.446E-01	1.218E-01	0.000E+00
TH-228	1.911E+00	1.983E-01	5.486E-02	0.000E+00
TH-229	6.152E-01	5.095E-01	5.190E-01	0.000E+00
TH-230	1.036E+00	1.712E-01	6.734E-02	0.000E+00
PA-231	-6.691E-01	1.623E+00	1.448E+00	0.000E+00
TH-232	1.847E+00	1.917E-01	5.305E-02	0.000E+00
TH-234	1.415E+00	1.317E+00	1.201E+00	0.000E+00
U-234	1.257E+00	2.675E-01	1.296E-01	0.000E+00
U-235	-7.823E-02	2.116E-01	2.030E-01	0.000E+00
NP-237	7.636E-01	3.271E-01	2.076E-01	0.000E+00
U-238	1.415E+00	1.317E+00	1.201E+00	0.000E+00
AM-242	2.885E+00	2.755E+00	1.892E+00	0.000E+00
ANH-511	1.207E-01	5.941E-02	2.763E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM	K.L. Act error) Ided	MDA (pCi/GRAM	)	
BE-7	-2.209E-01	3.847E-01	3.609E-01	0.000E+00	NOT IDENT.
NA-22	-7.674E-03	5.179E-02	4.175E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	5.675E+14	0.000E+00	0.000E+00	SHORT HLIF
AL-26	2.431E-03	2.827E-02	2.789E-02	0.000E+00	FAIL ABUN
SC-46	-1.167E-02	4.369E-02	4.203E-02	0.000E+00	FAIL ABUN
V-48	2.768E-02	1.542E-01	1.533E-01	0.000E+00	NOT IDENT.
CR-51	3.181E-01	5.647E-01	5.818E-01	0.000E+00	NOT IDENT.
MN-54	2.473E-02	4.393E-02	3.980E-02	0.000E+00	NOT IDENT.
CO-56	-3.519E-02	4.532E-02	4.181E-02	0.000E+00	NOT IDENT.
MN-56	0.000E+00	1.288E+41	0.000E+00	0.000E+00	SHORT HLIF
CO-57	1.514E-02	2.726E-02	2.758E-02	0.000E+00	NOT IDENT.
CO-58	-6.127E-02	4.681E-02	3.832E-02	0.000E+00	NOT IDENT.
FE-59	-8.235E-02	1.258E-01	1.149E-01	0.000E+00	NOT IDENT.
CO-60	1.008E-02	3.991E-02	3.928E-02	0.000E+00	NOT IDENT.
ZN-65	-4.320E-02	1.034E-01	8.123E-02	0.000E+00	NOT IDENT.
SE-75	2.687E-02	5.129E-02	4.679E-02	0.000E+00	FAIL ABUN
KR-85	0.000E+00	8.516E+00	8.234E+00	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.312E-02	5.136E-02	0.000E+00	NOT IDENT.
Y-88	-9.410E-04	3.857E-02	3.727E-02	0.000E+00	NOT IDENT.
Y-91	-4.762E-02	4.402E-02	3.896E-02	0.000E+00	NOT IDENT.
NB-94	1.637E-02	3.399E-02	3.370E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	1.041E-01	6.951E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	9.298E+01	0.000E+00	0.000E+00	SHORT HLIF
ZR-95	0.000E+00	1.270E-01	9.164E-02	0.000E+00	FAIL ABUN
MO-99	0.000E+00	1.349E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.102E+39	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.327E-02	5.474E-02	5.178E-02	0.000E+00	FAIL ABUN
RH-106	2.464E-01	2.915E-01	3.008E-01	0.000E+00	FAIL ABUN
RU-106	8.113E-02	2.996E-01	2.952E-01	0.000E+00	NOT IDENT.
AG-108M	2.032E-02	3.053E-02	3.136E-02	0.000E+00	NOT IDENT.
AG-110M	2.660E-02	3.993E-02	3.565E-02	0.000E+00	NOT IDENT.
SN-113	-1.601E-02	4.961E-02	4.822E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	3.341E+03	0.000E+00	0.000E+00	SHORT HLIF
SN-115	0.000E+00	7.015E+00	4.976E+00	0.000E+00	FAIL ABUN
SN-117M	-9.909E-03	1.671E-01	1.426E-01	0.000E+00	NOT IDENT.
TE-123M	-3.661E-03	3.689E-02	3.140E-02	0.000E+00	NOT IDENT.
SB-124	-1.113E-03	7.848E-02	7.352E-02	0.000E+00	NOT IDENT.
SB-125	8.541E-02	9.254E-02	9.619E-02	0.000E+00	FAIL ABUN
TE-125M	4.652E+00	1.287E+01	1.144E+01	0.000E+00	NOT IDENT.
I-126	9.455E-02	5.539E-01	4.676E-01	0.000E+00	NOT IDENT.
SB-126	-2.169E-01	4.358E-01	3.718E-01	0.000E+00	NOT IDENT.
SB-127	0.000E+00	3.998E+01	0.000E+00	0.000E+00	SHORT HLIF
I-131	-2.685E-01	5.588E-01	5.399E-01	0.000E+00	NOT IDENT.
I-132	0.000E+00	8.408E+41	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	3.732E+01	0.000E+00	0.000E+00	SHORT HLIF
BA-133	3.670E-02	4.985E-02	4.538E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.764E+10	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	7.428E-02	4.980E-02	0.000E+00	FAIL ABUN
I-135	0.000E+00	1.334E+36	0.000E+00	0.000E+00	SHORT HLIF
CS-136	7.116E-02	2.807E-01	2.796E-01	0.000E+00	FAIL ABUN
CE-139	5.201E-04	3.678E-02	3.144E-02	0.000E+00	NOT IDENT.
BA-140	8.430E-02	7.123E-01	6.982E-01	0.000E+00	FAIL ABUN
LA-140	4.021E-02	2.310E-01	1.948E-01	0.000E+00	FAIL ABUN
CE-141	-8.173E-02	9.471E-02	8.894E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.034E+06	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.739E-02	2.410E-01	2.090E-01	0.000E+00	NOT IDENT.
PM-144	2.497E-02	3.584E-02	3.610E-02	0.000E+00	NOT IDENT.
PR-144	0.000E+00	1.435E+41	0.000E+00	0.000E+00	SHORT HLIF
PM-146	0.000E+00	4.271E-02	4.513E-02	0.000E+00	NOT IDENT.
ND-147	-4.855E-01	1.787E+00	1.704E+00	0.000E+00	FAIL ABUN
PM-147	1.784E+04	5.470E+04	5.492E+04	0.000E+00	NOT IDENT.
PM-149	0.000E+00	3.066E+04	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.663E-02	1.362E-01	9.157E-02	0.000E+00	FAIL ABUN
GD-153	3.449E-02	1.204E-01	7.806E-02	0.000E+00	NOT IDENT.
EU-154	-2.051E-02	1.433E-01	1.157E-01	0.000E+00	FAIL ABUN
TB-160	4.986E-02	1.558E-01	1.579E-01	0.000E+00	FAIL ABUN
TM-171	-1.737E+01	3.150E+01	2.734E+01	0.000E+00	NOT IDENT.
HF-181	-1.282E-02	5.653E-02	5.448E-02	0.000E+00	FAIL ABUN
TA-182	-6.901E-03	2.159E-01	2.075E-01	0.000E+00	FAIL ABUN
IR-192	9.378E-03	4.003E-02	4.060E-02	0.000E+00	FAIL ABUN
BI-207	-1.849E-02	5.207E-02	4.902E-02	0.000E+00	FAIL ABUN
PB-211	-1.441E+00	1.406E+00	8.186E-01	0.000E+00	NOT IDENT.
RN-219	2.274E-02	4.302E-01	4.030E-01	0.000E+00	FAIL ABUN

RA-223	-3.059E-02	7.147E-01	6.189E-01	0.000E+00	FAIL ABUN
AC-227	3.632E-01	3.763E-01	3.936E-01	0.000E+00	FAIL ABUN
TH-227	3.569E-01	3.714E-01	3.868E-01	0.000E+00	FAIL ABUN
TH-231	0.000E+00	2.816E-01	1.999E-01	0.000E+00	FAIL ABUN
PA-233	2.600E-02	6.164E-02	6.314E-02	0.000E+00	FAIL ABUN
PA-234	6.201E-02	2.883E-01	2.880E-01	0.000E+00	FAIL ABUN
PA-234M	-3.479E-02	4.716E+00	4.653E+00	0.000E+00	NOT IDENT.
NP-239	-3.014E-02	1.882E-01	1.857E-01	0.000E+00	FAIL ABUN
AM-241	7.423E-03	1.512E-01	1.356E-01	0.000E+00	NOT IDENT.
CM-247	-2.327E-02	4.265E-02	3.488E-02	0.000E+00	FAIL ABUN
CF-249	1.926E-03	4.085E-02	4.060E-02	0.000E+00	NOT IDENT.
CF-251	2.156E-02	1.262E-01	1.240E-01	0.000E+00	NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 12:24:51.42

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*********************************************************************
*                          GENERAL ENG. LABS, LLC.                  *
*                              2040 Savage Road                     *
*                            Charleston, SC 29414                   *
*********************************************************************
Configuration    : DKA0:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438002.CNF;1
Sample date      : 11-MAR-2006 12:00:00 Acquisition date : 14-APR-2006 06:28:08
Sample ID        : G158438002           Sample quantity  : 1.33650E+02 GRAM
Detector name    : GAM19                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.56  0.0%
Energy tolerance : 2.00000 keV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513807               Detector SN#     :
Matrix Spike DPM :                      LCS DPM          :
*********************************************************************
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	1070	10.67*	1.185E+00	2.376E+01	2.376E+01	9.03
CD-109	88.03	219	3.79*	6.391E+00	2.538E+00	2.670E+00	37.54
SN-126	64.28	74	9.60	3.841E+00	5.602E-01	5.602E-01	92.56
	86.94	219	8.90	6.391E+00	1.081E+00	1.081E+00	55.19
	87.57	219	37.00*	6.391E+00	2.600E-01	2.600E-01	37.54
CS-135	268.24	140	16.00*	4.736E+00	5.180E-01	5.180E-01	46.28
BA-137M	661.65	16	89.98*	2.351E+00	2.117E-02	2.122E-02	236.88
CS-137	661.66	16	85.12*	2.351E+00	2.238E-02	2.243E-02	236.88
EU-155	86.54	219	30.90	6.391E+00	3.114E-01	3.154E-01	37.56
	105.31	81	20.70*	7.077E+00	1.557E-01	1.577E-01	86.18
HG-203	70.83	------	4.75	4.846E+00	------ Line Not Found		------
	72.87	------	8.00	5.094E+00	------ Line Not Found		------
	82.60	------	3.55	6.052E+00	------ Line Not Found		------
	279.20	64	77.30*	4.643E+00	4.971E-02	8.219E-02	83.89
TL-208	75.00	508	3.43	5.330E+00	7.810E+00	8.077E+00	22.80
	277.35	64	6.80	4.643E+00	5.651E-01	5.844E-01	84.33
	510.84	125	21.60	2.911E+00	5.587E-01	5.778E-01	49.93
	583.14	482	84.20*	2.615E+00	6.143E-01	6.353E-01	14.69
	763.30	------	1.64	2.086E+00	------ Line Not Found		------
	860.37	54	12.46	1.876E+00	6.545E-01	6.768E-01	76.82
	1093.90	------	0.37	1.518E+00	------ Line Not Found		------
BI-210	46.50	38	4.05*	1.268E+00	2.067E+00	2.073E+00	169.95
PB-210	46.50	38	4.05*	1.268E+00	2.067E+00	2.073E+00	169.95
BI-211	351.07	663	12.94*	3.889E+00	3.699E+00	3.699E+00	14.53
BI-212	727.18	102	11.80*	2.174E+00	1.116E+00	1.155E+00	40.10
PB-212	74.80	508	10.70	5.330E+00	2.504E+00	2.589E+00	23.04
	87.30	219	8.00	6.391E+00	1.203E+00	1.244E+00	38.85
	115.19	------	0.60	7.171E+00	------ Line Not Found		------
	238.63	1518	44.60*	5.176E+00	1.847E+00	1.911E+00	10.38
	300.09	82	3.41	4.381E+00	1.551E+00	1.604E+00	80.22
BI-214	609.31	431	46.30*	2.523E+00	1.036E+00	1.036E+00	16.53
	768.36	63	5.04	2.072E+00	1.690E+00	1.690E+00	81.26

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	934.06	42	3.21	1.746E+00	2.120E+00	2.120E+00	81.30
	1120.29	121	15.10	1.485E+00	1.520E+00	1.520E+00	39.94
	1238.11	------	5.94	1.361E+00	------ Line Not Found		------
	1377.67	------	4.11	1.243E+00	------ Line Not Found		------
PB-214	74.81	508	6.21	5.330E+00	4.314E+00	4.314E+00	22.32
	77.11	684	10.50	5.577E+00	3.279E+00	3.280E+00	16.98
	87.30	219	4.41	6.391E+00	2.182E+00	2.182E+00	38.42
	241.98	319	7.50	5.133E+00	2.331E+00	2.331E+00	33.69
	295.21	381	19.20	4.437E+00	1.257E+00	1.257E+00	21.29
	351.92	663	37.20*	3.889E+00	1.287E+00	1.287E+00	15.44
RA-226	295.21	381	19.20	4.437E+00	1.257E+00	1.257E+00	21.29
	351.92	663	37.20	3.889E+00	1.287E+00	1.287E+00	14.28
	609.31	431	46.30*	2.523E+00	1.036E+00	1.036E+00	16.53
AC-228	209.25	145	4.40	5.665E+00	1.631E+00	1.649E+00	85.47
	338.32	252	11.40	4.005E+00	1.550E+00	1.568E+00	49.02
	463.01	76	4.40	3.148E+00	1.541E+00	1.559E+00	72.71
	794.95	82	4.60	2.012E+00	2.476E+00	2.503E+00	58.20
	911.21	345	27.70*	1.785E+00	1.958E+00	1.980E+00	17.41
	964.77	68	5.20	1.697E+00	2.158E+00	2.182E+00	53.25
	969.11	174	16.60	1.690E+00	1.744E+00	1.763E+00	31.25
RA-228	209.25	145	4.40	5.665E+00	1.631E+00	1.649E+00	85.47
	338.32	252	11.40	4.005E+00	1.550E+00	1.568E+00	49.02
	463.01	76	4.40	3.148E+00	1.541E+00	1.559E+00	72.71
	794.95	82	4.60	2.012E+00	2.476E+00	2.503E+00	58.20
	911.21	345	27.70*	1.785E+00	1.958E+00	1.980E+00	17.41
	964.77	68	5.20	1.697E+00	2.158E+00	2.182E+00	53.25
	969.11	174	16.60	1.690E+00	1.744E+00	1.763E+00	31.25
TH-228	84.40	------	1.21	6.190E+00	------ Line Not Found		------
	238.60	1518	44.60*	5.176E+00	1.847E+00	1.911E+00	10.38
	300.10	82	3.41	4.381E+00	1.551E+00	1.604E+00	99.20
TH-229	85.43	219	16.50	6.391E+00	5.831E-01	5.831E-01	37.54
	88.47	219	27.10	6.391E+00	3.550E-01	3.550E-01	37.54
	100.00	55	12.40	6.943E+00	1.803E-01	1.803E-01	115.09
	193.63	------	4.59*	5.948E+00	------ Line Not Found		------
	210.97	145	3.26	5.665E+00	2.199E+00	2.199E+00	57.06
TH-230	295.21	381	19.20	4.437E+00	1.257E+00	1.257E+00	21.29
	351.92	663	37.20	3.889E+00	1.287E+00	1.287E+00	14.28
	609.31	431	46.30*	2.523E+00	1.036E+00	1.036E+00	16.53
PA-231	283.67	------	1.60*	4.570E+00	------ Line Not Found		------
	301.29	82	4.60	4.381E+00	1.150E+00	1.150E+00	80.47
	330.00	77	1.30	4.098E+00	4.059E+00	4.059E+00	79.00
TH-232	238.59	1518	44.60*	5.176E+00	1.847E+00	1.847E+00	10.38
	911.20	345	27.70	1.785E+00	1.958E+00	1.958E+00	17.40
	964.40	68	5.20	1.697E+00	2.158E+00	2.158E+00	53.25
	969.11	174	16.60	1.690E+00	1.744E+00	1.744E+00	31.25
TH-234	63.29	74	3.80*	3.841E+00	1.415E+00	1.415E+00	93.06
	92.38	296	5.41	6.702E+00	2.295E+00	2.295E+00	35.82
	112.81	------	0.24	7.161E+00	------ Line Not Found		------
U-234	67.67	------	0.37	4.432E+00	------ Line Not Found		------

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	241.98	319	7.49	5.133E+00	2.334E+00	2.334E+00	33.70
	295.21	381	19.20*	4.437E+00	1.257E+00	1.257E+00	21.29
	351.92	663	37.20	3.889E+00	1.287E+00	1.287E+00	15.44
U-235	89.95	162	2.70	6.555E+00	2.577E+00	2.577E+00	62.00
	93.35	296	4.50	6.702E+00	2.759E+00	2.759E+00	41.73
	105.00	81	2.10	7.077E+00	1.535E+00	1.535E+00	90.78
	143.76	------	10.50*	6.906E+00	------ Line Not Found		------
	163.33	26	4.70	6.552E+00	2.413E-01	2.413E-01	286.35
	185.71	167	54.00	6.093E+00	1.428E-01	1.428E-01	48.40
	205.31	------	5.00	5.731E+00	------ Line Not Found		------
NP-237	86.48	219	12.60*	6.391E+00	7.636E-01	7.636E-01	42.84
	95.87	------	2.60	6.819E+00	------ Line Not Found		------
U-238	63.29	74	3.80*	3.841E+00	1.415E+00	1.415E+00	93.06
AM-242	99.55	55	0.63	6.943E+00	3.550E+00	3.551E+00	115.09
	103.70	81	1.01*	7.077E+00	3.191E+00	3.193E+00	86.17
ANH-511	511.00	125	100.00*	2.911E+00	1.207E-01	1.207E-01	49.23

Nuclide Type: NATURAL

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-224	240.98	319	3.95*	5.133E+00	4.426E+00	4.577E+00	33.23

Flag: "*" = Keyline

Sample ID : G158438002 Acquisition date : 14-APR-2006 06:28:08

Total number of lines in spectrum 61
Number of unidentified lines 20
Number of lines tentatively identified by NID 41 67.21%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.376E+01	2.376E+01	0.215E+01	9.03	
CD-109	464.00D	1.05	2.538E+00	2.670E+00	1.002E+00	37.54	
SN-126	1.00E+05Y	1.00	2.600E-01	2.600E-01	0.976E-01	37.54	
CS-135	2.30E+06Y	1.00	5.180E-01	5.180E-01	2.397E-01	46.28	
BA-137M	30.17Y	1.00	2.117E-02	2.122E-02	5.026E-02	236.88	
CS-137	30.17Y	1.00	2.238E-02	2.243E-02	5.313E-02	236.88	
EU-155	4.96Y	1.01	1.557E-01	1.577E-01	1.359E-01	86.18	
HG-203	46.61D	1.65	4.971E-02	8.219E-02	6.895E-02	83.89	
TL-208	1.91Y	1.03	6.143E-01	6.353E-01	0.933E-01	14.69	
BI-210	22.26Y	1.00	2.067E+00	2.073E+00	3.524E+00	169.95	
PB-210	22.26Y	1.00	2.067E+00	2.073E+00	3.524E+00	169.95	
BI-211	7.04E+08Y	1.00	3.699E+00	3.699E+00	0.538E+00	14.53	
BI-212	1.91Y	1.03	1.116E+00	1.155E+00	0.463E+00	40.10	
PB-212	1.91Y	1.03	1.847E+00	1.911E+00	0.198E+00	10.38	
BI-214	1600.00Y	1.00	1.036E+00	1.036E+00	0.171E+00	16.53	
PB-214	1600.00Y	1.00	1.287E+00	1.287E+00	0.199E+00	15.44	
RA-226	1600.00Y	1.00	1.036E+00	1.036E+00	0.171E+00	16.53	
AC-228	5.75Y	1.01	1.958E+00	1.980E+00	0.345E+00	17.41	
RA-228	5.75Y	1.01	1.958E+00	1.980E+00	0.345E+00	17.41	
TH-228	1.91Y	1.03	1.847E+00	1.911E+00	0.198E+00	10.38	
TH-229	7340.00Y	1.00	3.550E-01	3.550E-01	1.333E-01	37.54	K
TH-230	7.70E+04Y	1.00	1.036E+00	1.036E+00	0.171E+00	16.53	
PA-231	3.28E+04Y	1.00	1.150E+00	1.150E+00	0.925E+00	80.47	K
TH-232	1.41E+10Y	1.00	1.847E+00	1.847E+00	0.192E+00	10.38	
TH-234	4.47E+09Y	1.00	1.415E+00	1.415E+00	1.317E+00	93.06	
U-234	2.45E+05Y	1.00	1.257E+00	1.257E+00	0.268E+00	21.29	
U-235	7.04E+08Y	1.00	1.428E-01	1.428E-01	0.691E-01	48.40	K
NP-237	2.14E+06Y	1.00	7.636E-01	7.636E-01	3.271E-01	42.84	
U-238	4.47E+09Y	1.00	1.415E+00	1.415E+00	1.317E+00	93.06	
AM-242	152.00Y	1.00	3.191E+00	3.193E+00	2.751E+00	86.17	
ANH-511	1.00E+09Y	1.00	1.207E-01	1.207E-01	0.594E-01	49.23	
			---------	---------			
	Total Activity :		6.055E+01	6.096E+01			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-224	1.91Y	1.03	4.426E+00	4.577E+00	1.521E+00	33.23	
			---------	---------			
	Total Activity :		4.426E+00	4.577E+00			

Grand Total Activity : 6.498E+01 6.554E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Sample ID : G158438002 Acquisition date : 14-APR-2006 06:28:08

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
10	5.03	214	194	1.60	9.85	6	15	2.97E-02	41.5	2.09E-32	
10	7.08	232	870	2.78	13.94	6	15	3.22E-02	59.1	1.28E-21	
0	10.87	3	550	0.56	21.50	20	5	4.34E-04	****	2.71E-12	
0	40.07	36	190	1.16	79.84	78	5	4.94E-03	****	5.17E-01	
0	129.17	94	366	1.06	257.83	254	9	1.30E-02	76.4	7.11E+00	
0	213.89	62	374	3.56	427.08	423	13	8.57E-03	****	5.58E+00	
0	409.92	91	147	2.56	818.76	811	15	1.26E-02	62.2	3.46E+00	T
0	549.11	15	73	0.54	1096.89	1090	9	2.02E-03	****	2.75E+00	
0	568.83	120	165	2.36	1136.30	1128	18	1.67E-02	54.5	2.67E+00	T
0	756.09	28	72	0.81	1510.55	1503	13	3.82E-03	****	2.10E+00	T
0	760.99	26	42	1.57	1520.34	1516	9	3.62E-03	98.4	2.09E+00	
0	787.19	46	80	1.49	1572.71	1566	15	6.36E-03	92.0	2.03E+00	
0	836.91	18	62	1.05	1672.08	1666	10	2.52E-03	****	1.93E+00	T
0	1032.35	10	27	1.02	2062.76	2054	10	1.32E-03	****	1.60E+00	
0	1192.55	28	34	3.56	2383.03	2376	12	3.83E-03	86.8	1.41E+00	
0	1240.35	60	77	2.25	2478.60	2469	20	8.29E-03	77.6	1.36E+00	
0	1256.92	15	34	0.81	2511.74	2506	10	2.11E-03	****	1.34E+00	
0	1285.10	56	63	8.25	2568.08	2553	28	7.80E-03	84.3	1.32E+00	
0	1298.86	51	40	11.40	2595.58	2581	27	7.12E-03	74.5	1.31E+00	T
0	1379.81	20	38	2.17	2757.45	2749	20	2.84E-03	****	1.24E+00	
0	1503.35	8	11	0.86	3004.50	3000	10	1.08E-03	****	1.16E+00	
0	1516.36	9	6	0.83	3030.51	3027	8	1.20E-03	****	1.15E+00	
0	1589.55	29	24	1.85	3176.87	3171	13	4.09E-03	76.5	1.11E+00	
0	1668.51	20	0	1.11	3334.80	3328	16	2.78E-03	44.7	1.07E+00	
0	1765.39	75	6	1.71	3528.57	3520	15	1.04E-02	28.0	1.04E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 12:24:52.71

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration    : DKA0:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438002.CNF;1 *
* Acquisition date : 14-APR-2006 06:28:08  Detector SN#    :            *
* Detector ID      : GAM19                 Sensitivity     : 3.00000    *
* Geometry         : CAN                   Energy tolerance: 2.00000    *
* Elapsed live time: 0 02:00:00.00         Abundance limit : 75.00000   *
* Elapsed real time: 0 02:00:01.56         Half life ratio : 8.00000    *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      : 11-MAR-2006 12:00:00  Nuclide Library : EPI        *
* Sample ID        : G158438002            Analyst initials: MJH1       *
* Batch Number     : 513807                Sample Quantity : 1.33650E+02 GRAM  *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
*                                                                       *
* CALIB. DATE/TIME : 16-FEB-2006 08:01:37.2MS Isotope      :            *
* MSD DPM          :                      MSD Isotope     :            *
* LCS DPM          :                      LCS Isotope     :            *
*************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.376E+01	2.146E+00	3.004E-01	1.842E-02	79.100
CD-109	2.670E+00	1.002E+00	6.796E-01	5.561E-02	3.929
SN-126	2.600E-01	9.761E-02	6.646E-02	5.421E-03	3.912
CS-135	5.180E-01	2.397E-01	1.472E-01	1.265E-02	3.520
BA-137M	2.122E-02	5.026E-02	3.606E-02	2.324E-03	0.588
CS-137	2.243E-02	5.313E-02	3.812E-02	2.465E-03	0.588
EU-155	1.425E-01	1.361E-01	9.892E-02	7.046E-03	1.441
HG-203	8.219E-02	6.895E-02	4.840E-02	3.507E-03	1.698
TL-208	6.353E-01	9.329E-02	3.447E-02	2.472E-03	18.432
BI-210	2.073E+00	3.524E+00	2.723E+00	2.122E-01	0.761
PB-210	2.073E+00	3.524E+00	2.723E+00	2.122E-01	0.761
BI-211	3.699E+00	5.376E-01	1.869E-01	1.284E-02	19.790
BI-212	1.155E+00	4.630E-01	2.566E-01	2.159E-02	4.501
PB-212	1.911E+00	1.983E-01	5.303E-02	4.424E-03	36.030
BI-214	1.036E+00	1.712E-01	6.616E-02	5.448E-03	15.655
PB-214	1.287E+00	1.987E-01	6.516E-02	5.615E-03	19.750
RA-224	4.577E+00	1.521E+00	6.032E-01	4.244E-02	7.587
RA-226	1.036E+00	1.712E-01	6.616E-02	5.448E-03	15.655

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AC-228	1.980E+00	3.446E-01	1.205E-01	1.226E-02	16.429
RA-228	1.980E+00	3.446E-01	1.205E-01	1.226E-02	16.429
TH-228	1.911E+00	1.983E-01	5.302E-02	4.423E-03	36.033
TH-229	3.550E-01	1.333E-01	4.998E-01	3.462E-02	0.710
TH-230	1.036E+00	1.712E-01	6.616E-02	5.447E-03	15.655
PA-231	1.150E+00	9.251E-01	1.404E+00	2.006E-01	0.819
TH-232	1.847E+00	1.917E-01	5.127E-02	4.277E-03	36.034
TH-234	1.415E+00	1.317E+00	1.135E+00	2.018E-01	1.247
U-234	1.257E+00	2.675E-01	1.258E-01	1.166E-02	9.994
U-235	1.428E-01	6.909E-02	1.945E-01	3.226E-02	0.734
NP-237	7.636E-01	3.271E-01	1.972E-01	4.372E-02	3.872
U-238	1.415E+00	1.317E+00	1.135E+00	2.018E-01	1.247
AM-242	2.885E+00	2.755E+00	1.803E+00	1.274E-01	1.600
ANH-511	1.207E-01	5.941E-02	2.706E-02	1.669E-03	4.460

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-2.209E-01		3.847E-01	3.531E-01	2.459E-02	-0.626
NA-22	-7.674E-03		5.179E-02	4.157E-02	2.392E-03	-0.185
NA-24	-4.981E+08		2.838E+08	Half-Life too short		
AL-26	2.431E-03		2.827E-02	2.795E-02	1.565E-03	0.087
SC-46	-1.167E-02		4.369E-02	4.157E-02	2.987E-03	-0.281
V-48	2.768E-02		1.542E-01	1.519E-01	1.051E-02	0.182
CR-51	3.181E-01		5.647E-01	5.652E-01	4.086E-02	0.563
MN-54	2.473E-02		4.393E-02	3.932E-02	2.773E-03	0.629
CO-56	-3.519E-02		4.532E-02	4.132E-02	2.927E-03	-0.852
MN-56	-1.000E+35		6.441E+34	Half-Life too short		
CO-57	1.514E-02		2.726E-02	2.636E-02	1.712E-03	0.574
CO-58	-6.127E-02		4.681E-02	3.784E-02	2.653E-03	-1.619
FE-59	-8.235E-02		1.258E-01	1.141E-01	8.259E-03	-0.722
CO-60	1.008E-02		3.991E-02	3.914E-02	2.225E-03	0.257
ZN-65	-4.320E-02		1.034E-01	8.068E-02	5.012E-03	-0.535
SE-75	2.687E-02		5.129E-02	4.530E-02	3.193E-03	0.593
KR-85	1.556E+01		8.516E+00	8.066E+00	4.982E-01	1.929
SR-85	9.706E-02		5.312E-02	5.031E-02	3.108E-03	1.929
Y-88	-9.410E-04		3.857E-02	3.736E-02	2.083E-03	-0.025
Y-91	-4.762E-02		4.402E-02	3.821E-02	2.407E-03	-1.246
NB-94	1.637E-02		3.399E-02	3.320E-02	2.195E-03	0.493
NB-95	9.909E-02		1.041E-01	6.857E-02	4.698E-03	1.445
NB-95M	2.655E-04		4.649E-05	Half-Life too short		
ZR-95	9.576E-02	+	1.270E-01	9.039E-02	7.131E-03	1.059
MO-99	-6.994E-06		6.746E-05	Half-Life too short		
TC-99M	-5.708E+31		5.509E+32	Half-Life too short		
RU-103	-2.327E-02		5.474E-02	5.069E-02	6.486E-03	-0.459
RH-106	2.464E-01		2.915E-01	2.957E-01	1.896E-02	0.833
RU-106	8.113E-02		2.996E-01	2.902E-01	3.497E-02	0.280

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AG-108M	2.032E-02		3.053E-02	3.063E-02	1.943E-03	0.664
AG-110M	2.660E-02		3.993E-02	3.507E-02	2.378E-03	0.758
SN-113	-1.601E-02		4.961E-02	4.701E-02	2.831E-03	-0.341
CD-115	-2.243E-03		1.671E-03	Half-Life too short		
SN-115	8.654E+00	+	7.015E+00	4.926E+00	3.500E-01	1.757
SN-117M	-9.909E-03		1.671E-01	1.368E-01	9.181E-03	-0.072
TE-123M	-3.661E-03		3.689E-02	3.014E-02	2.044E-03	-0.121
SB-124	-1.113E-03		7.848E-02	7.358E-02	4.584E-03	-0.015
SB-125	8.541E-02		9.254E-02	9.391E-02	5.695E-03	0.909
TE-125M	4.652E+00		1.287E+01	1.091E+01	9.797E-01	0.426
I-126	9.455E-02		5.539E-01	4.602E-01	2.974E-02	0.205
SB-126	-2.169E-01		4.358E-01	3.664E-01	2.448E-02	-0.592
SB-127	-1.348E-05		1.999E-05	Half-Life too short		
I-131	-2.685E-01		5.588E-01	5.256E-01	3.683E-02	-0.511
I-132	-1.000E+35		4.204E+35	Half-Life too short		
TE-132	3.187E-06		1.866E-05	Half-Life too short		
BA-133	3.670E-02		4.985E-02	4.417E-02	5.199E-03	0.831
I-133	-1.119E+04		8.822E+03	Half-Life too short		
CS-134	1.376E-01	+	7.428E-02	4.917E-02	3.443E-03	2.798
I-135	1.131E+30		6.668E+29	Half-Life too short		
CS-136	7.116E-02		2.807E-01	2.774E-01	1.975E-02	0.256
CE-139	5.201E-04		3.678E-02	3.020E-02	2.054E-03	0.017
BA-140	8.430E-02		7.123E-01	6.845E-01	2.232E-01	0.123
LA-140	4.021E-02		2.310E-01	1.947E-01	1.126E-02	0.206
CE-141	-8.173E-02		9.471E-02	8.523E-02	5.779E-03	-0.959
CE-143	1.451E+01	+	2.517E+00	Half-Life too short		
CE-144	1.739E-02		2.410E-01	2.000E-01	2.899E-02	0.087
PM-144	2.497E-02		3.584E-02	3.556E-02	2.349E-03	0.702
PR-144	1.000E+35		7.177E+34	Half-Life too short		
PM-146	5.483E-02		4.271E-02	4.411E-02	3.846E-03	1.243
ND-147	-4.855E-01		1.787E+00	1.670E+00	2.290E-01	-0.291
PM-147	1.784E+04		5.470E+04	5.247E+04	3.411E+03	0.340
PM-149	-6.547E-03		1.533E-02	Half-Life too short		
EU-152	-1.663E-02		1.362E-01	8.906E-02	6.277E-03	-0.187
GD-153	3.449E-02		1.204E-01	7.430E-02	5.504E-03	0.464
EU-154	-2.051E-02		1.433E-01	1.152E-01	1.072E-02	-0.178
TB-160	4.986E-02		1.558E-01	1.562E-01	1.119E-02	0.319
TM-171	-1.737E+01		3.150E+01	2.586E+01	2.049E+00	-0.672
HF-181	-1.282E-02		5.653E-02	5.330E-02	3.231E-03	-0.240
TA-182	-6.901E-03		2.159E-01	2.064E-01	1.191E-02	-0.033
IR-192	9.378E-03		4.003E-02	3.943E-02	2.644E-03	0.238
BI-207	-1.849E-02		5.207E-02	4.865E-02	3.174E-03	-0.380
PB-211	-1.441E+00		1.406E+00	7.985E-01	4.977E-01	-1.805
RN-219	2.274E-02		4.302E-01	3.931E-01	5.328E-02	0.058
RA-223	-3.059E-02		7.147E-01	6.014E-01	1.011E-01	-0.051
AC-227	3.632E-01		3.763E-01	3.809E-01	5.588E-02	0.954
TH-227	3.569E-01		3.714E-01	3.743E-01	6.497E-02	0.954
TH-231	6.094E-01	+	2.816E-01	1.936E-01	1.599E-02	3.147

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-233	2.600E-02		6.164E-02	6.130E-02	4.311E-03	0.424
PA-234	6.201E-02		2.883E-01	2.852E-01	5.162E-02	0.217
PA-234M	-3.479E-02		4.716E+00	4.612E+00	3.901E-01	-0.008
NP-239	-3.014E-02		1.882E-01	1.773E-01	1.171E-02	-0.170
AM-241	7.423E-03		1.512E-01	1.281E-01	1.185E-02	0.058
CM-247	-2.327E-02		4.265E-02	3.402E-02	1.933E-03	-0.684
CF-249	1.926E-03		4.085E-02	3.957E-02	2.252E-03	0.049
CF-251	2.156E-02		1.262E-01	1.192E-01	8.161E-03	0.181

```
*****************************************************************************
*                                                                           *
*                          General Engineering Labs, LLC                    *
*                                2040 SAVAGE ROAD                           *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID     : 513807                    SAMPLE ID  : G158438002        *
*   ANALYST      : MJH1                      DETECTOR   : GAM19             *
*   SAMPLE DATE  : 11-MAR-2006 12:00:00.00   COUNT TIME :    0 02:00:00.00   *
*   ANALYSIS DATE: 14-APR-2006 06:28:08.38   SAMPLE ALQT:  133.650 GRAM      *
*                                                                           *
*****************************************************************************
```

GROSS GAMMA ACTIVITY (pCi/GRAM)	: 2.874E+31
GROSS GAMMA ERROR (pCi/GRAM)	: 9.080E+30
GROSS GAMMA MDA (pCi/GRAM)	: 1.142E+31
GROSS GAMMA DLC (pCi/GRAM)	: 5.532E+30

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 08:27:49.14

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438003.CNF;1
Sample date      : 11-MAR-2006 12:05:00 Acquisition date : 14-APR-2006 06:27:22
Sample ID        : G158438003           Sample quantity  : 1.20050E+02 GRAM
Detector name    : GAMMA17              Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.06  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513807               Detector SN#     : 30-TN10348
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.69*	103	342	1.43	81.23	77	10	1.43E-02	36.7	
2	0	63.45*	89	389	1.05	114.91	111	8	1.23E-02	43.7	
3	2	73.10*	47	357	1.33	134.29	131	16	6.53E-03	65.3	1.79E+00
4	2	75.01*	443	404	1.20	138.11	131	16	6.15E-02	9.1	
5	2	77.31*	668	378	1.12	142.73	131	16	9.28E-02	6.6	
6	3	84.34*	89	272	1.49	156.84	153	14	1.24E-02	34.8	2.19E+00
7	3	87.41	182	282	1.04	163.01	153	14	2.52E-02	16.0	
8	5	90.17*	139	209	1.14	168.55	166	13	1.93E-02	17.7	1.86E+00
9	5	93.05*	199	334	1.48	174.34	166	13	2.76E-02	20.2	
10	0	99.20*	19	232	1.11	186.70	184	7	2.58E-03	142.8	
11	0	129.55	77	293	1.11	247.64	243	10	1.07E-02	43.1	
12	0	144.70*	46	206	2.15	278.07	275	8	6.44E-03	57.4	
13	0	153.76	60	257	1.39	296.27	292	10	8.30E-03	51.7	
14	0	185.82*	149	278	1.22	360.66	355	12	2.07E-02	24.9	
15	0	209.82	103	164	0.79	408.85	405	8	1.43E-02	23.8	
16	4	238.90*	897	101	1.24	467.25	462	27	1.25E-01	3.9	1.65E+00
17	4	242.05	218	146	1.94	473.58	462	27	3.02E-02	16.3	
18	0	277.65*	100	161	1.09	545.09	539	13	1.39E-02	28.6	
19	0	295.67*	215	151	1.45	581.27	577	11	2.99E-02	13.4	
20	0	300.73	66	147	1.60	591.43	587	12	9.23E-03	38.5	
21	0	328.16	68	133	2.89	646.52	641	12	9.39E-03	36.4	
22	0	338.57*	130	134	1.44	667.44	663	10	1.80E-02	19.2	
23	0	352.23*	342	123	1.56	694.86	690	11	4.75E-02	8.5	
24	0	464.92*	80	105	7.15	921.22	913	20	1.11E-02	34.2	
25	0	511.64*	46	113	1.94	1015.06	1010	16	6.35E-03	64.1	
26	0	583.40*	246	63	1.63	1159.21	1154	10	3.42E-02	9.0	
27	0	609.67*	247	81	1.51	1211.97	1206	15	3.43E-02	10.5	
28	0	708.38	22	47	1.14	1410.28	1405	11	3.09E-03	63.1	
29	0	727.98*	45	55	2.03	1449.65	1446	11	6.23E-03	35.4	
30	0	768.81*	34	27	1.17	1531.68	1528	9	4.74E-03	34.4	
31	0	795.13*	35	45	1.05	1584.56	1579	12	4.81E-03	43.6	
32	0	860.56*	30	18	2.79	1716.00	1711	10	4.22E-03	33.8	
33	0	911.70*	149	66	1.82	1818.76	1809	16	2.08E-02	14.8	
34	0	924.10	9	24	1.42	1843.67	1842	9	1.25E-03	101.6	
35	0	938.85	14	11	1.17	1873.31	1871	5	1.94E-03	44.8	
36	2	965.19	37	56	2.22	1926.23	1920	23	5.09E-03	46.6	3.43E+00
37	2	969.30*	89	55	1.89	1934.47	1920	23	1.23E-02	19.6	
38	0	1039.44*	22	21	1.10	2075.42	2072	11	3.04E-03	45.7	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1084.82	21	19	4.04	2166.59	2161	11	2.90E-03	46.1	
40	0	1102.90*	23	33	4.40	2202.92	2197	13	3.25E-03	54.9	
41	0	1128.78*	82	115	18.30	2254.92	2235	43	1.14E-02	46.7	
42	0	1238.86*	31	41	2.08	2476.13	2471	11	4.27E-03	45.2	
43	0	1303.16	23	36	4.58	2605.33	2598	23	3.24E-03	68.8	
44	0	1335.65*	8	17	0.78	2670.63	2665	10	1.09E-03	108.7	
45	0	1374.65	47	17	10.33	2749.01	2729	34	6.53E-03	30.7	
46	0	1430.89*	11	5	1.07	2862.03	2856	10	1.55E-03	49.9	
47	0	1434.99*	14	6	1.61	2870.27	2866	11	1.90E-03	44.4	
48	0	1461.29*	512	5	1.92	2923.13	2914	19	7.11E-02	4.6	
49	0	1489.41	22	0	2.69	2979.64	2972	14	3.06E-03	21.3	
50	0	1621.54	19	20	1.90	3245.21	3236	20	2.64E-03	62.1	
51	0	1670.93	20	4	3.90	3344.48	3335	17	2.73E-03	32.9	
52	0	1764.97*	38	0	2.37	3533.51	3524	15	5.34E-03	18.0	
53	0	1934.45	5	7	1.41	3874.21	3870	14	7.18E-04	116.9	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

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*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438003   *
* Acquisition date : 14-APR-2006 06:27:22 Detector SN#    : 30-TN10348  *
* Detector ID      : GAMMA17              Sensitivity     : 3.000       *
* Geometry         : CAN                  Energy tolerance: 2.000       *
* Elapsed live time:    0 02:00:00.00     Abundance limit : 75.000      *
* Elapsed real time:    0 02:00:01.06     Half life ratio :  8.000      *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      : 11-MAR-2006 12:05:00 Nuclide Library : FERMC       *
* Sample ID        : G158438003           Analyst initials: MJH1        *
* Batch Number     : 513807               Sample Quantity : 1.2005E+02 GRAM
* Recovery         :    1.00000           Carrier Weight :    0.00000   *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
* Standard Weight  :   0.00000                                          *
* CALIB. DATE/TIME :  4-JAN-2006 11:17:00 MS Isotope      :             *
* MSD DPM          : ********            MSD Isotope     :             *
* LCS DPM          :    0.000            LCS Isotope     :             *
* LCSD DPM         :    0.000            LCSD Isotope    :             *
*************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	1.785E+01	1.642E+00	6.644E-01	0.000E+00
CD-109	2.267E+00	7.267E-01	1.127E+00	0.000E+00
SN-126	2.208E-01	7.077E-02	1.096E-01	0.000E+00
CE-141	8.179E-02	9.855E-02	1.518E-01	0.000E+00
HG-203	1.770E-01	1.012E-01	7.999E-02	0.000E+00
TL-208	4.933E-01	8.911E-02	8.088E-02	0.000E+00
BI-210	1.208E+00	8.875E-01	8.422E-01	0.000E+00
PB-210	1.208E+00	8.875E-01	8.422E-01	0.000E+00
BI-211	2.685E+00	4.547E-01	3.495E-01	0.000E+00
BI-212	7.890E-01	5.594E-01	6.357E-01	0.000E+00
PB-212	1.517E+00	1.180E-01	8.927E-02	0.000E+00
PB-214	9.342E-01	1.582E-01	1.282E-01	0.000E+00
RA-224	4.199E+00	1.371E+00	1.017E+00	0.000E+00
RA-226	9.069E-01	1.900E-01	1.423E-01	0.000E+00
AC-228	1.345E+00	3.979E-01	2.801E-01	0.000E+00
RA-228	1.345E+00	3.979E-01	2.801E-01	0.000E+00
TH-228	1.517E+00	1.180E-01	8.926E-02	0.000E+00
TH-229	-1.061E-01	4.851E-01	8.293E-01	0.000E+00
TH-230	9.069E-01	1.900E-01	1.422E-01	0.000E+00
PA-231	8.912E-01	1.487E+00	2.660E+00	0.000E+00
TH-232	1.467E+00	1.141E-01	8.631E-02	0.000E+00
TH-234	1.046E+00	9.131E-01	1.006E+00	0.000E+00
U-234	9.751E-01	2.612E-01	2.477E-01	0.000E+00
U-235	2.324E-01	2.666E-01	3.503E-01	0.000E+00
NP-237	6.483E-01	2.078E-01	3.412E-01	0.000E+00
U-238	1.046E+00	9.131E-01	1.006E+00	0.000E+00
ANH-511	6.582E-02	8.444E-02	6.879E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)

BE-7	-1.859E-01	4.578E-01	7.969E-01	0.000E+00	NOT IDENT.
NA-22	6.315E-03	4.775E-02	8.918E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	6.881E+14	0.000E+00	0.000E+00	SHORT HLIF
AL-26	1.786E-02	3.629E-02	7.908E-02	0.000E+00	FAIL ABUN
SC-46	2.260E-02	5.302E-02	9.833E-02	0.000E+00	NOT IDENT.
V-48	1.633E-01	1.977E-01	3.913E-01	0.000E+00	NOT IDENT.
CR-51	1.178E-01	5.629E-01	1.045E+00	0.000E+00	NOT IDENT.
MN-54	2.237E-02	4.794E-02	8.784E-02	0.000E+00	NOT IDENT.
CO-56	1.168E-02	5.826E-02	1.043E-01	0.000E+00	FAIL ABUN
MN-56	0.000E+00	2.000E+41	0.000E+00	0.000E+00	SHORT HLIF
CO-57	-4.706E-04	2.330E-02	4.118E-02	0.000E+00	NOT IDENT.
CO-58	-1.990E-02	6.255E-02	1.058E-01	0.000E+00	NOT IDENT.
FE-59	2.510E-02	1.720E-01	2.781E-01	0.000E+00	NOT IDENT.
CO-60	-2.548E-02	5.600E-02	8.090E-02	0.000E+00	NOT IDENT.
ZN-65	-5.917E-02	1.226E-01	2.112E-01	0.000E+00	NOT IDENT.
SE-75	1.159E-02	4.680E-02	8.183E-02	0.000E+00	FAIL ABUN
KR-85	1.016E+01	8.677E+00	1.664E+01	0.000E+00	NOT IDENT.
SR-85	6.336E-02	5.413E-02	1.038E-01	0.000E+00	NOT IDENT.
Y-88	5.619E-02	4.168E-02	1.053E-01	0.000E+00	NOT IDENT.
Y-91	-8.443E-03	4.856E-02	8.593E-02	0.000E+00	NOT IDENT.
NB-94	3.885E-02	4.252E-02	8.056E-02	0.000E+00	NOT IDENT.
NB-95	-4.382E-02	9.734E-02	1.396E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	6.763E+01	0.000E+00	0.000E+00	SHORT HLIF
ZR-95	1.235E-01	1.053E-01	2.066E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.193E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	9.640E+38	0.000E+00	0.000E+00	SHORT HLIF
RU-103	7.018E-04	6.320E-02	1.137E-01	0.000E+00	FAIL ABUN
RH-106	4.823E-02	3.843E-01	6.924E-01	0.000E+00	FAIL ABUN
RU-106	2.015E-01	3.881E-01	7.229E-01	0.000E+00	NOT IDENT.
AG-108M	-1.483E-02	3.665E-02	6.411E-02	0.000E+00	NOT IDENT.
AG-110M	4.107E-02	4.198E-02	8.141E-02	0.000E+00	FAIL ABUN
SN-113	-2.279E-02	5.263E-02	9.243E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	4.278E+03	0.000E+00	0.000E+00	SHORT HLIF
SN-115	6.026E+00	5.395E+00	1.101E+01	0.000E+00	NOT IDENT.
SN-117M	-2.256E-02	1.291E-01	2.237E-01	0.000E+00	NOT IDENT.
TE-123M	-1.950E-02	2.935E-02	4.942E-02	0.000E+00	NOT IDENT.
SB-124	-6.244E-02	9.972E-02	1.636E-01	0.000E+00	NOT IDENT.
SB-125	7.345E-02	1.032E-01	1.955E-01	0.000E+00	FAIL ABUN
TE-125M	5.590E+00	9.807E+00	1.787E+01	0.000E+00	NOT IDENT.
I-126	-1.281E-02	5.852E-01	1.034E+00	0.000E+00	NOT IDENT.
SB-126	2.589E-02	4.433E-01	7.937E-01	0.000E+00	NOT IDENT.
SB-127	0.000E+00	4.680E+01	0.000E+00	0.000E+00	SHORT HLIF
I-131	3.871E-01	5.872E-01	1.116E+00	0.000E+00	NOT IDENT.
I-132	0.000E+00	2.000E+41	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	3.321E+01	0.000E+00	0.000E+00	SHORT HLIF
BA-133	4.706E-03	4.982E-02	8.068E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	2.183E+10	0.000E+00	0.000E+00	SHORT HLIF
CS-134	9.101E-02	7.927E-02	1.070E-01	0.000E+00	FAIL ABUN
CS-135	-2.412E-02	1.659E-01	2.801E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.614E+36	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.395E-02	2.887E-01	5.422E-01	0.000E+00	FAIL ABUN
BA-137M	-3.387E-02	4.177E-02	6.816E-02	0.000E+00	NOT IDENT.
CS-137	-3.571E-02	4.416E-02	7.209E-02	0.000E+00	NOT IDENT.
CE-139	1.198E-02	3.031E-02	5.400E-02	0.000E+00	NOT IDENT.
BA-140	2.324E-02	8.405E-01	1.506E+00	0.000E+00	NOT IDENT.
LA-140	2.399E-02	2.956E-01	5.547E-01	0.000E+00	FAIL ABUN
CE-143	0.000E+00	1.704E+06	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-4.618E-02	1.936E-01	3.366E-01	0.000E+00	NOT IDENT.
PM-144	-4.497E-02	4.742E-02	7.602E-02	0.000E+00	NOT IDENT.
PR-144	0.000E+00	1.054E+41	0.000E+00	0.000E+00	SHORT HLIF
PM-146	-3.302E-02	4.563E-02	7.761E-02	0.000E+00	NOT IDENT.
ND-147	-2.712E-01	2.211E+00	3.910E+00	0.000E+00	FAIL ABUN
PM-147	3.651E+03	4.704E+04	8.356E+04	0.000E+00	NOT IDENT.
PM-149	0.000E+00	3.284E+04	0.000E+00	0.000E+00	SHORT HLIF
EU-152	4.474E-02	1.047E-01	1.949E-01	0.000E+00	FAIL ABUN
GD-153	3.004E-02	8.579E-02	1.132E-01	0.000E+00	FAIL ABUN
EU-154	1.634E-02	1.319E-01	2.462E-01	0.000E+00	NOT IDENT.
EU-155	2.884E-02	9.176E-02	1.653E-01	0.000E+00	FAIL ABUN
TB-160	1.773E-02	1.976E-01	3.518E-01	0.000E+00	FAIL ABUN
TM-171	-3.031E+00	1.437E+01	2.565E+01	0.000E+00	NOT IDENT.
HF-181	1.518E-02	6.224E-02	1.145E-01	0.000E+00	FAIL ABUN
TA-182	1.553E-01	2.298E-01	4.489E-01	0.000E+00	FAIL ABUN
IR-192	-3.561E-03	3.795E-02	6.920E-02	0.000E+00	FAIL ABUN
BI-207	-7.615E-03	6.227E-02	1.128E-01	0.000E+00	NOT IDENT.
PB-211	1.093E-01	9.596E-01	1.752E+00	0.000E+00	NOT IDENT.
BI-214	0.000E+00	1.900E-01	3.107E-01	0.000E+00	FAIL ABUN
RN-219	3.248E-01	4.136E-01	7.931E-01	0.000E+00	NOT IDENT.
RA-223	1.191E-02	7.168E-01	1.159E+00	0.000E+00	FAIL ABUN

AC-227	-1.471E-01	3.954E-01	6.601E-01	0.000E+00	FAIL ABUN
TH-227	-1.445E-01	3.886E-01	6.488E-01	0.000E+00	FAIL ABUN
TH-231	3.053E-01	1.929E-01	3.616E-01	0.000E+00	FAIL ABUN
PA-233	4.115E-02	6.954E-02	1.232E-01	0.000E+00	FAIL ABUN
PA-234	-1.610E-01	3.448E-01	6.074E-01	0.000E+00	FAIL ABUN
PA-234M	1.394E+00	5.054E+00	9.610E+00	0.000E+00	NOT IDENT.
NP-239	1.389E-01	1.679E-01	3.090E-01	0.000E+00	FAIL ABUN
AM-241	9.359E-03	5.593E-02	1.020E-01	0.000E+00	NOT IDENT.
AM-242	5.996E-01	1.786E+00	3.230E+00	0.000E+00	FAIL ABUN
CM-247	2.998E-03	3.845E-02	7.003E-02	0.000E+00	FAIL ABUN
CF-249	1.898E-02	4.489E-02	8.322E-02	0.000E+00	NOT IDENT.
CF-251	-7.396E-03	1.177E-01	2.042E-01	0.000E+00	NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 08:27:50.93

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438003.CNF;1
Sample date      : 11-MAR-2006 12:05:00 Acquisition date : 14-APR-2006 06:27:22
Sample ID        : G158438003           Sample quantity  : 1.20050E+02 GRAM
Detector name    : GAMMA17              Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.06  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513807               Detector SN#     : 30-TN10348
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	512	10.67*	8.406E-01	1.785E+01	1.785E+01	9.20
CD-109	88.03	182	3.79*	6.955E+00	2.155E+00	2.267E+00	32.06
SN-126	64.28	89	9.60	6.974E+00	4.140E-01	4.140E-01	87.31
	86.94	182	8.90	6.955E+00	9.178E-01	9.178E-01	32.06
	87.57	182	37.00*	6.955E+00	2.208E-01	2.208E-01	32.06
CE-141	145.44	46	48.40*	5.939E+00	5.042E-02	1.037E-01	114.71
HG-203	70.83	------	4.75	7.025E+00	------ Line Not Found		------
	72.87	47	8.00	7.029E+00	2.615E-01	4.323E-01	130.56
	82.60	89	3.55	6.983E+00	1.127E+00	1.863E+00	69.69
	279.20	100	77.30*	3.794E+00	1.071E-01	1.770E-01	57.19
TL-208	75.00	443	3.43	7.028E+00	5.746E+00	5.942E+00	18.12
	277.35	100	6.80	3.794E+00	1.217E+00	1.259E+00	57.19
	510.84	46	21.60	2.171E+00	3.047E-01	3.151E-01	128.29
	583.14	246	84.20*	1.917E+00	4.770E-01	4.933E-01	18.07
	763.30	------	1.64	1.491E+00	------ Line Not Found		------
	860.37	30	12.46	1.336E+00	5.703E-01	5.897E-01	67.58
	1093.90	------	0.37	1.079E+00	------ Line Not Found		------
BI-210	46.50	103	4.05*	6.578E+00	1.205E+00	1.208E+00	73.47
PB-210	46.50	103	4.05*	6.578E+00	1.205E+00	1.208E+00	73.47
BI-211	351.07	342	12.94*	3.078E+00	2.685E+00	2.685E+00	16.93
BI-212	727.18	45	11.80*	1.558E+00	7.630E-01	7.890E-01	70.89
PB-212	74.80	443	10.70	7.028E+00	1.842E+00	1.905E+00	18.12
	87.30	182	8.00	6.955E+00	1.021E+00	1.056E+00	32.06
	115.19	------	0.60	6.530E+00	------ Line Not Found		------
	238.63	897	44.60*	4.288E+00	1.467E+00	1.517E+00	7.78
	300.09	66	3.41	3.543E+00	1.719E+00	1.778E+00	76.99
PB-214	74.81	443	6.21	7.028E+00	3.174E+00	3.174E+00	18.12
	77.11	668	10.50	7.023E+00	2.832E+00	2.832E+00	13.19
	87.30	182	4.41	6.955E+00	1.852E+00	1.852E+00	32.06
	241.98	218	7.50	4.244E+00	2.138E+00	2.139E+00	32.65
	295.21	215	19.20	3.596E+00	9.751E-01	9.751E-01	26.79
	351.92	342	37.20*	3.078E+00	9.341E-01	9.342E-01	16.93

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-226	295.21	215	19.20	3.596E+00	9.751E-01	9.751E-01	26.79
	351.92	342	37.20	3.078E+00	9.341E-01	9.342E-01	16.93
	609.31	247	46.30*	1.839E+00	9.069E-01	9.069E-01	20.95
AC-228	209.25	103	4.40	4.728E+00	1.543E+00	1.560E+00	47.52
	338.32	130	11.40	3.190E+00	1.116E+00	1.128E+00	38.42
	463.01	80	4.40	2.377E+00	2.388E+00	2.415E+00	68.49
	794.95	35	4.60	1.436E+00	1.638E+00	1.656E+00	87.10
	911.21	149	27.70*	1.268E+00	1.330E+00	1.345E+00	29.58
	964.77	37	5.20	1.205E+00	1.830E+00	1.850E+00	93.14
	969.11	89	16.60	1.201E+00	1.391E+00	1.407E+00	39.20
RA-228	209.25	103	4.40	4.728E+00	1.543E+00	1.560E+00	47.52
	338.32	130	11.40	3.190E+00	1.116E+00	1.128E+00	38.42
	463.01	80	4.40	2.377E+00	2.388E+00	2.415E+00	68.49
	794.95	35	4.60	1.436E+00	1.638E+00	1.656E+00	87.10
	911.21	149	27.70*	1.268E+00	1.330E+00	1.345E+00	29.58
	964.77	37	5.20	1.205E+00	1.830E+00	1.850E+00	93.14
	969.11	89	16.60	1.201E+00	1.391E+00	1.407E+00	39.20
TH-228	84.40	89	1.21	6.983E+00	3.306E+00	3.419E+00	69.69
	238.60	897	44.60*	4.288E+00	1.467E+00	1.517E+00	7.78
	300.10	66	3.41	3.543E+00	1.719E+00	1.778E+00	76.99
TH-229	85.43	89	16.50	6.983E+00	2.424E-01	2.424E-01	69.69
	88.47	182	27.10	6.955E+00	3.014E-01	3.014E-01	32.06
	100.00	19	12.40	6.805E+00	6.883E-02	6.883E-02	285.56
	193.63	------	4.59*	5.001E+00	------ Line Not Found		------
	210.97	103	3.26	4.728E+00	2.080E+00	2.080E+00	47.52
TH-230	295.21	215	19.20	3.596E+00	9.751E-01	9.751E-01	26.79
	351.92	342	37.20	3.078E+00	9.341E-01	9.341E-01	16.93
	609.31	247	46.30*	1.839E+00	9.069E-01	9.069E-01	20.95
PA-231	283.67	------	1.60*	3.726E+00	------ Line Not Found		------
	301.29	66	4.60	3.543E+00	1.274E+00	1.274E+00	76.99
	330.00	68	1.30	3.281E+00	4.959E+00	4.959E+00	72.79
TH-232	238.59	897	44.60*	4.288E+00	1.467E+00	1.467E+00	7.78
	911.20	149	27.70	1.268E+00	1.330E+00	1.330E+00	29.58
	964.40	37	5.20	1.205E+00	1.830E+00	1.830E+00	93.14
	969.11	89	16.60	1.201E+00	1.391E+00	1.391E+00	39.20
TH-234	63.29	89	3.80*	6.974E+00	1.046E+00	1.046E+00	87.31
	92.38	199	5.41	6.891E+00	1.667E+00	1.667E+00	40.37
	112.81	------	0.24	6.574E+00	------ Line Not Found		------
U-234	67.67	------	0.37	7.011E+00	------ Line Not Found		------
	241.98	218	7.49	4.244E+00	2.141E+00	2.141E+00	32.65
	295.21	215	19.20*	3.596E+00	9.751E-01	9.751E-01	26.79
	351.92	342	37.20	3.078E+00	9.341E-01	9.341E-01	16.93
U-235	89.95	139	2.70	6.926E+00	2.323E+00	2.323E+00	35.32
	93.35	199	4.50	6.891E+00	2.004E+00	2.004E+00	40.37
	105.00	------	2.10	6.713E+00	------ Line Not Found		------
	143.76	46	10.50*	5.939E+00	2.324E-01	2.324E-01	114.71
	163.33	------	4.70	5.565E+00	------ Line Not Found		------
	185.71	149	54.00	5.140E+00	1.682E-01	1.682E-01	49.81
	205.31	------	5.00	4.802E+00	------ Line Not Found		------

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
NP-237	86.48	182	12.60*	6.955E+00	6.483E-01	6.483E-01	32.06
	95.87	------	2.60	6.854E+00	------ Line Not Found		------
U-238	63.29	89	3.80*	6.974E+00	1.046E+00	1.046E+00	87.31
ANH-511	511.00	46	100.00*	2.171E+00	6.582E-02	6.582E-02	128.29

Nuclide Type: NATURAL

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-224	240.98	218	3.95*	4.244E+00	4.060E+00	4.199E+00	32.65

Flag: "*" = Keyline

Sample ID : G158438003 Acquisition date : 14-APR-2006 06:27:22

Total number of lines in spectrum 53
Number of unidentified lines 12
Number of lines tentatively identified by NID 41 77.36%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.785E+01	1.785E+01	0.164E+01	9.20	
CD-109	464.00D	1.05	2.155E+00	2.267E+00	0.727E+00	32.06	
SN-126	1.00E+05Y	1.00	2.208E-01	2.208E-01	0.708E-01	32.06	
CE-141	32.50D	2.06	5.042E-02	1.037E-01	1.189E-01	114.71	
HG-203	46.61D	1.65	1.071E-01	1.770E-01	1.012E-01	57.19	
TL-208	1.91Y	1.03	4.770E-01	4.933E-01	0.891E-01	18.07	
BI-210	22.26Y	1.00	1.205E+00	1.208E+00	0.888E+00	73.47	
PB-210	22.26Y	1.00	1.205E+00	1.208E+00	0.888E+00	73.47	
BI-211	7.04E+08Y	1.00	2.685E+00	2.685E+00	0.455E+00	16.93	
BI-212	1.91Y	1.03	7.630E-01	7.890E-01	5.594E-01	70.89	
PB-212	1.91Y	1.03	1.467E+00	1.517E+00	0.118E+00	7.78	
PB-214	1600.00Y	1.00	9.341E-01	9.342E-01	1.582E-01	16.93	
RA-226	1600.00Y	1.00	9.069E-01	9.069E-01	1.900E-01	20.95	
AC-228	5.75Y	1.01	1.330E+00	1.345E+00	0.398E+00	29.58	
RA-228	5.75Y	1.01	1.330E+00	1.345E+00	0.398E+00	29.58	
TH-228	1.91Y	1.03	1.467E+00	1.517E+00	0.118E+00	7.78	
TH-229	7340.00Y	1.00	3.014E-01	3.014E-01	0.966E-01	32.06	K
TH-230	7.70E+04Y	1.00	9.069E-01	9.069E-01	1.900E-01	20.95	
PA-231	3.28E+04Y	1.00	1.274E+00	1.274E+00	0.981E+00	76.99	K
TH-232	1.41E+10Y	1.00	1.467E+00	1.467E+00	0.114E+00	7.78	
TH-234	4.47E+09Y	1.00	1.046E+00	1.046E+00	0.913E+00	87.31	
U-234	2.45E+05Y	1.00	9.751E-01	9.751E-01	2.612E-01	26.79	
U-235	7.04E+08Y	1.00	2.324E-01	2.324E-01	2.666E-01	114.71	
NP-237	2.14E+06Y	1.00	6.483E-01	6.483E-01	2.078E-01	32.06	
U-238	4.47E+09Y	1.00	1.046E+00	1.046E+00	0.913E+00	87.31	
ANH-511	1.00E+09Y	1.00	6.582E-02	6.582E-02	8.444E-02	128.29	
			---	---			
	Total Activity :		4.212E+01	4.253E+01			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-224	1.91Y	1.03	4.060E+00	4.199E+00	1.371E+00	32.65	
			---	---			
	Total Activity :		4.060E+00	4.199E+00			

Grand Total Activity : 4.618E+01 4.673E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Sample ID : G158438003 Acquisition date : 14-APR-2006 06:27:22

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.55	77	293	1.11	247.64	243	10	1.07E-02	86.3	6.25E+00	T
0	153.76	60	257	1.39	296.27	292	10	8.30E-03	****	5.76E+00	T
0	708.38	22	47	1.14	1410.28	1405	11	3.09E-03	****	1.60E+00	T
0	768.81	34	27	1.17	1531.68	1528	9	4.74E-03	68.7	1.48E+00	T
0	924.10	9	24	1.42	1843.67	1842	9	1.25E-03	****	1.25E+00	T
0	938.85	14	11	1.17	1873.31	1871	5	1.94E-03	89.7	1.24E+00	T
0	1039.44	22	21	1.10	2075.42	2072	11	3.04E-03	91.5	1.13E+00	T
0	1084.82	21	19	4.04	2166.59	2161	11	2.90E-03	92.2	1.09E+00	
0	1102.90	23	33	4.40	2202.92	2197	13	3.25E-03	****	1.07E+00	
0	1128.78	82	115	18.30	2254.92	2235	43	1.14E-02	93.4	1.05E+00	
0	1238.86	31	41	2.08	2476.13	2471	11	4.27E-03	90.4	9.69E-01	T
0	1303.16	23	36	4.58	2605.33	2598	23	3.24E-03	****	9.27E-01	
0	1335.65	8	17	0.78	2670.63	2665	10	1.09E-03	****	9.08E-01	
0	1374.65	47	17	10.33	2749.01	2729	34	6.53E-03	61.4	8.86E-01	
0	1430.89	11	5	1.07	2862.03	2856	10	1.55E-03	99.8	8.56E-01	
0	1434.99	14	6	1.61	2870.27	2866	11	1.90E-03	88.8	8.54E-01	
0	1489.41	22	0	2.69	2979.64	2972	14	3.06E-03	42.6	8.27E-01	T
0	1621.54	19	20	1.90	3245.21	3236	20	2.64E-03	****	7.69E-01	
0	1670.93	20	4	3.90	3344.48	3335	17	2.73E-03	65.9	7.49E-01	
0	1764.97	38	0	2.37	3533.51	3524	15	5.34E-03	36.0	7.15E-01	
0	1934.45	5	7	1.41	3874.21	3870	14	7.18E-04	****	6.59E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 08:27:56.65

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*****************************************************************************
*                          GENERAL ENG. LABS, LLC.                          *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                               DETECTOR DATA                               *
*                                                                           *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438003.CNF;1  *
* Acquisition date : 14-APR-2006 06:27:22  Detector SN#    : 30-TN10348     *
* Detector ID      : GAMMA17               Sensitivity     : 3.00000        *
* Geometry         : CAN                   Energy tolerance: 2.00000        *
* Elapsed live time: 0 02:00:00.00         Abundance limit : 75.00000       *
* Elapsed real time: 0 02:00:01.06         Half life ratio : 8.00000        *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date      : 11-MAR-2006 12:05:00  Nuclide Library : EPI            *
* Sample ID        : G158438003            Analyst initials: MJH1           *
* Batch Number     : 513807                Sample Quantity : 1.20050E+02 GRAM  *
*****************************************************************************
*                                                                           *
*                                 QC DATA                                   *
*                                                                           *
* CALIB. DATE/TIME : 4-JAN-2006 11:17:00.18MS Isotope      :               *
* MSD DPM          :                       MSD Isotope     :               *
* LCS DPM          :                       LCS Isotope     :               *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	1.785E+01	1.642E+00	6.660E-01	0.000E+00	26.803
CD-109	2.267E+00	7.267E-01	1.093E+00	0.000E+00	2.074
SN-126	2.208E-01	7.077E-02	1.063E-01	0.000E+00	2.076
CE-141	8.179E-02	9.855E-02	1.481E-01	0.000E+00	0.552
HG-203	1.770E-01	1.012E-01	7.862E-02	0.000E+00	2.251
TL-208	4.933E-01	8.911E-02	8.019E-02	0.000E+00	6.151
BI-210	1.208E+00	8.875E-01	8.110E-01	0.000E+00	1.489
PB-210	1.208E+00	8.875E-01	8.110E-01	0.000E+00	1.489
BI-211	2.685E+00	4.547E-01	3.445E-01	0.000E+00	7.796
BI-212	7.890E-01	5.594E-01	6.320E-01	0.000E+00	1.249
PB-212	1.517E+00	1.180E-01	8.759E-02	0.000E+00	17.322
PB-214	9.342E-01	1.582E-01	1.263E-01	0.000E+00	7.394
RA-224	4.199E+00	1.371E+00	9.975E-01	0.000E+00	4.210
RA-226	9.069E-01	1.900E-01	1.411E-01	0.000E+00	6.427
AC-228	1.345E+00	3.979E-01	2.792E-01	0.000E+00	4.818
RA-228	1.345E+00	3.979E-01	2.792E-01	0.000E+00	4.818
TH-228	1.517E+00	1.180E-01	8.758E-02	0.000E+00	17.324
TH-229	-1.061E-01	4.851E-01	8.117E-01	0.000E+00	-0.131

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	9.069E-01	1.900E-01	1.411E-01	0.000E+00	6.427
PA-231	8.912E-01	1.487E+00	2.615E+00	0.000E+00	0.341
TH-232	1.467E+00	1.141E-01	8.468E-02	0.000E+00	17.324
TH-234	1.046E+00	9.131E-01	9.724E-01	0.000E+00	1.075
U-234	9.751E-01	2.612E-01	2.436E-01	0.000E+00	4.002
U-235	2.324E-01	2.666E-01	3.417E-01	0.000E+00	0.680
NP-237	6.483E-01	2.078E-01	3.309E-01	0.000E+00	1.959
U-238	1.046E+00	9.131E-01	9.724E-01	0.000E+00	1.075
ANH-511	6.582E-02	8.444E-02	6.809E-02	0.000E+00	0.967

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.859E-01		4.578E-01	7.882E-01	0.000E+00	-0.236
NA-22	6.315E-03		4.775E-02	8.925E-02	0.000E+00	0.071
AL-26	1.786E-02		3.629E-02	7.948E-02	0.000E+00	0.225
SC-46	2.260E-02		5.302E-02	9.798E-02	0.000E+00	0.231
V-48	1.633E-01		1.977E-01	3.904E-01	0.000E+00	0.418
CR-51	1.178E-01		5.629E-01	1.028E+00	0.000E+00	0.115
MN-54	2.237E-02		4.794E-02	8.746E-02	0.000E+00	0.256
CO-56	1.168E-02		5.826E-02	1.039E-01	0.000E+00	0.112
CO-57	-4.706E-04		2.330E-02	4.009E-02	0.000E+00	-0.012
CO-58	-1.990E-02		6.255E-02	1.053E-01	0.000E+00	-0.189
FE-59	2.510E-02		1.720E-01	2.778E-01	0.000E+00	0.090
CO-60	-2.548E-02		5.600E-02	8.100E-02	0.000E+00	-0.315
ZN-65	-5.917E-02		1.226E-01	2.110E-01	0.000E+00	-0.280
SE-75	1.159E-02		4.680E-02	8.038E-02	0.000E+00	0.144
KR-85	1.016E+01		8.677E+00	1.647E+01	0.000E+00	0.617
SR-85	6.336E-02		5.413E-02	1.028E-01	0.000E+00	0.617
Y-88	5.619E-02		4.168E-02	1.059E-01	0.000E+00	0.531
Y-91	-8.443E-03		4.856E-02	8.515E-02	0.000E+00	-0.099
NB-94	3.885E-02		4.252E-02	8.005E-02	0.000E+00	0.485
NB-95	-4.382E-02		9.734E-02	1.389E-01	0.000E+00	-0.316
ZR-95	1.235E-01		1.053E-01	2.055E-01	0.000E+00	0.601
RU-103	7.018E-04		6.320E-02	1.126E-01	0.000E+00	0.006
RH-106	4.823E-02		3.843E-01	6.870E-01	0.000E+00	0.070
RU-106	2.015E-01		3.881E-01	7.173E-01	0.000E+00	0.281
AG-108M	-1.483E-02		3.665E-02	6.334E-02	0.000E+00	-0.234
AG-110M	4.107E-02		4.198E-02	8.083E-02	0.000E+00	0.508
SN-113	-2.279E-02		5.263E-02	9.121E-02	0.000E+00	-0.250
SN-115	6.026E+00		5.395E+00	1.098E+01	0.000E+00	0.549
SN-117M	-2.256E-02		1.291E-01	2.184E-01	0.000E+00	-0.103
TE-123M	-1.950E-02		2.935E-02	4.826E-02	0.000E+00	-0.404
SB-124	-6.244E-02		9.972E-02	1.643E-01	0.000E+00	-0.380
SB-125	7.345E-02		1.032E-01	1.932E-01	0.000E+00	0.380
TE-125M	5.590E+00		9.807E+00	1.737E+01	0.000E+00	0.322
I-126	-1.281E-02		5.852E-01	1.027E+00	0.000E+00	-0.012

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126	2.589E-02		4.433E-01	7.889E-01	0.000E+00	0.033
I-131	3.871E-01		5.872E-01	1.101E+00	0.000E+00	0.352
BA-133	4.706E-03		4.982E-02	7.953E-02	0.000E+00	0.059
CS-134	9.101E-02	+	7.927E-02	1.065E-01	0.000E+00	0.855
CS-135	-2.412E-02		1.659E-01	2.752E-01	0.000E+00	-0.088
CS-136	1.395E-02		2.887E-01	5.413E-01	0.000E+00	0.026
BA-137M	-3.387E-02		4.177E-02	6.768E-02	0.000E+00	-0.500
CS-137	-3.571E-02		4.416E-02	7.158E-02	0.000E+00	-0.499
CE-139	1.198E-02		3.031E-02	5.276E-02	0.000E+00	0.227
BA-140	2.324E-02		8.405E-01	1.492E+00	0.000E+00	0.016
LA-140	2.399E-02		2.956E-01	5.566E-01	0.000E+00	0.043
CE-144	-4.618E-02		1.936E-01	3.281E-01	0.000E+00	-0.141
PM-144	-4.497E-02		4.742E-02	7.553E-02	0.000E+00	-0.595
PM-146	-3.302E-02		4.563E-02	7.672E-02	0.000E+00	-0.430
ND-147	-2.712E-01		2.211E+00	3.872E+00	0.000E+00	-0.070
PM-147	3.651E+03		4.704E+04	8.135E+04	0.000E+00	0.045
EU-152	4.474E-02		1.047E-01	1.920E-01	0.000E+00	0.233
GD-153	3.004E-02	+	8.579E-02	1.099E-01	0.000E+00	0.273
EU-154	1.634E-02		1.319E-01	2.464E-01	0.000E+00	0.066
EU-155	2.884E-02		9.176E-02	1.607E-01	0.000E+00	0.179
TB-160	1.773E-02		1.976E-01	3.506E-01	0.000E+00	0.051
TM-171	-3.031E+00		1.437E+01	2.480E+01	0.000E+00	-0.122
HF-181	1.518E-02		6.224E-02	1.132E-01	0.000E+00	0.134
TA-182	1.553E-01		2.298E-01	4.490E-01	0.000E+00	0.346
IR-192	-3.561E-03		3.795E-02	6.812E-02	0.000E+00	-0.052
BI-207	-7.615E-03		6.227E-02	1.126E-01	0.000E+00	-0.068
PB-211	1.093E-01		9.596E-01	1.730E+00	0.000E+00	0.063
BI-214	9.069E-01	+	1.900E-01	3.082E-01	0.000E+00	2.943
RN-219	3.248E-01		4.136E-01	7.828E-01	0.000E+00	0.415
RA-223	1.191E-02		7.168E-01	1.141E+00	0.000E+00	0.010
AC-227	-1.471E-01		3.954E-01	6.482E-01	0.000E+00	-0.227
TH-227	-1.445E-01		3.886E-01	6.371E-01	0.000E+00	-0.227
TH-231	3.053E-01		1.929E-01	3.553E-01	0.000E+00	0.859
PA-233	4.115E-02		6.954E-02	1.213E-01	0.000E+00	0.339
PA-234	-1.610E-01		3.448E-01	6.057E-01	0.000E+00	-0.266
PA-234M	1.394E+00		5.054E+00	9.589E+00	0.000E+00	0.145
NP-239	1.389E-01		1.679E-01	3.007E-01	0.000E+00	0.462
AM-241	9.359E-03		5.593E-02	9.854E-02	0.000E+00	0.095
AM-242	5.996E-01		1.786E+00	3.139E+00	0.000E+00	0.191
CM-247	2.998E-03		3.845E-02	6.913E-02	0.000E+00	0.043
CF-249	1.898E-02		4.489E-02	8.212E-02	0.000E+00	0.231
CF-251	-7.396E-03		1.177E-01	1.997E-01	0.000E+00	-0.037

```
*****************************************************************************
*                                                                           *
*                          General Engineering Labs, LLC                    *
*                                2040 SAVAGE ROAD                           *
*                              CHARLESTON ,SC 29417                         *
*                               GROSS GAMMA REPORT                          *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID     : 513807                    SAMPLE ID  : G158438003        *
*   ANALYST      : MJH1                      DETECTOR   : GAMMA17           *
*   SAMPLE DATE  : 11-MAR-2006 12:05:00.00   COUNT TIME :    0 02:00:00.00   *
*   ANALYSIS DATE: 14-APR-2006 06:27:22.15   SAMPLE ALQT:  120.050 GRAM      *
*                                                                           *
*****************************************************************************
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GROSS GAMMA ACTIVITY (pCi/GRAM)	: 8.198E+00
GROSS GAMMA ERROR (pCi/GRAM)	: 2.046E+00
GROSS GAMMA MDA (pCi/GRAM)	: 8.655E+00
GROSS GAMMA DLC (pCi/GRAM)	: 4.193E+00

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 08:28:33.18

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438004.CNF;1
Sample date      : 11-MAR-2006 07:38:00 Acquisition date : 14-APR-2006 06:27:59
Sample ID        : G158438004           Sample quantity  : 1.39950E+02 GRAM
Detector name    : GAMMA16              Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.22  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513807               Detector SN#     : 1922864
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.90*	40	314	0.73	124.33	121	8	5.51E-03	80.8	
2	3	74.81*	282	393	1.17	148.13	143	15	3.92E-02	13.4	2.74E+00
3	3	77.04*	429	383	1.19	152.59	143	15	5.96E-02	9.3	
4	5	83.84*	83	170	1.39	166.17	164	13	1.15E-02	25.7	2.60E+00
5	5	87.20*	227	333	1.21	172.90	164	13	3.16E-02	14.9	
6	5	89.91	131	287	0.94	178.31	176	12	1.82E-02	21.9	1.66E+00
7	5	92.77*	208	317	1.49	184.01	176	12	2.88E-02	16.8	
8	0	129.26*	41	276	0.97	256.95	254	7	5.71E-03	69.9	
9	3	185.83*	223	319	1.62	370.00	364	16	3.09E-02	17.0	1.02E+00
10	3	189.12	38	172	1.33	376.57	364	16	5.25E-03	58.3	
11	0	209.29	174	434	1.12	416.89	410	14	2.41E-02	26.7	
12	0	224.59	36	186	1.27	447.48	444	7	4.93E-03	65.8	
13	4	238.50*	1349	199	1.13	475.27	472	18	1.87E-01	3.3	1.74E+00
14	4	241.36*	249	260	1.81	480.98	472	18	3.45E-02	17.6	
15	0	270.40	164	192	1.45	539.03	534	12	2.27E-02	18.8	
16	0	276.95	117	183	1.06	552.12	546	12	1.62E-02	25.0	
17	0	294.97*	333	205	1.23	588.14	583	12	4.62E-02	10.3	
18	0	299.18	56	187	0.76	596.57	595	9	7.84E-03	45.1	
19	0	307.22	15	84	0.78	612.64	610	5	2.14E-03	93.0	
20	0	328.34	63	219	1.01	654.85	649	12	8.79E-03	48.7	
21	0	338.23*	299	186	1.28	674.61	669	13	4.15E-02	11.2	
22	0	351.81*	525	186	1.20	701.77	695	14	7.29E-02	7.2	
23	0	409.25*	57	116	1.56	816.59	811	11	7.93E-03	39.5	
24	0	462.44	72	117	1.14	922.92	917	12	1.00E-02	32.2	
25	0	486.35*	20	67	1.15	970.73	967	8	2.72E-03	78.6	
26	0	510.48*	87	171	1.52	1018.96	1013	14	1.20E-02	38.2	
27	0	522.40	7	82	1.28	1042.80	1038	9	1.02E-03	226.6	
28	0	539.51*	11	34	1.02	1077.02	1075	6	1.55E-03	107.7	
29	0	582.79*	437	88	1.33	1163.54	1158	10	6.06E-02	6.3	
30	0	609.01*	362	96	1.37	1215.97	1212	12	5.03E-02	7.7	
31	0	639.47	20	81	3.29	1276.88	1269	13	2.81E-03	94.3	
32	0	682.97	11	43	0.76	1363.86	1363	7	1.49E-03	106.5	
33	0	696.75	44	55	2.52	1391.42	1386	10	6.11E-03	35.0	
34	0	727.06	130	47	1.72	1452.04	1447	11	1.81E-02	13.6	
35	0	753.90	4	44	0.47	1505.72	1505	6	5.15E-04	289.8	
36	0	768.43	17	50	0.79	1534.77	1530	8	2.38E-03	75.5	
37	0	771.42*	23	60	1.18	1540.74	1538	10	3.20E-03	67.4	
38	0	785.32	21	39	3.19	1568.54	1566	9	2.86E-03	59.6	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	794.29*	64	42	1.13	1586.48	1582	9	8.88E-03	22.6	
40	0	813.32	29	36	0.96	1624.54	1620	11	3.97E-03	44.7	
41	0	859.73*	54	51	2.69	1717.38	1711	12	7.44E-03	31.5	
42	0	892.47	15	20	1.45	1782.87	1781	8	2.08E-03	57.7	
43	3	903.61*	30	35	2.40	1805.14	1796	30	4.16E-03	47.7	1.51E+00
44	3	910.55*	327	30	1.92	1819.02	1796	30	4.54E-02	6.7	
45	0	933.72*	34	38	2.21	1865.36	1859	10	4.69E-03	39.3	
46	0	940.16*	11	13	1.07	1878.26	1875	6	1.54E-03	70.6	
47	3	964.27*	69	23	1.87	1926.48	1923	19	9.65E-03	16.8	3.78E+00
48	3	968.46*	189	32	1.89	1934.86	1923	19	2.63E-02	9.8	
49	0	987.60	9	39	1.74	1973.14	1967	12	1.29E-03	138.7	
50	0	1086.79*	19	28	1.52	2171.57	2166	10	2.63E-03	59.9	
51	0	1119.80*	89	69	1.65	2237.62	2232	15	1.23E-02	23.1	
52	0	1180.18	18	39	1.14	2358.42	2356	10	2.43E-03	70.1	
53	0	1237.45	32	45	0.70	2473.02	2470	10	4.44E-03	43.0	
54	0	1277.65	54	18	6.92	2553.46	2545	18	7.50E-03	22.9	
55	0	1345.89	16	18	3.05	2690.02	2684	15	2.21E-03	64.3	
56	0	1376.43	33	29	3.02	2751.14	2744	19	4.52E-03	43.1	
57	0	1459.60*	1034	40	2.07	2917.60	2910	19	1.44E-01	3.5	
58	0	1477.44	11	3	0.60	2953.30	2952	5	1.48E-03	38.9	
59	0	1492.86*	17	5	4.33	2984.16	2978	17	2.29E-03	39.4	
60	0	1501.27*	14	4	3.48	3000.99	2996	13	1.98E-03	42.0	
61	0	1586.29	25	12	1.76	3171.17	3168	10	3.52E-03	31.1	
62	0	1591.50*	26	2	2.26	3181.60	3177	11	3.58E-03	25.2	
63	0	1614.11	7	3	3.69	3226.87	3221	10	9.03E-04	60.1	
64	0	1636.09*	5	6	1.72	3270.86	3269	7	6.52E-04	104.1	
65	0	1649.70	5	4	0.89	3298.11	3297	5	6.71E-04	76.5	
66	0	1660.55*	6	2	0.69	3319.83	3316	8	8.31E-04	68.6	
67	0	1728.14	27	0	2.50	3455.15	3450	11	3.75E-03	19.2	
68	0	1736.97	20	6	3.53	3472.83	3462	24	2.78E-03	39.3	
69	0	1763.40*	54	23	2.31	3525.74	3517	18	7.53E-03	25.3	
70	0	1789.95	16	10	7.63	3578.90	3571	19	2.15E-03	54.0	
71	0	1810.79	8	0	1.50	3620.63	3617	10	1.11E-03	35.4	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

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*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                               DETECTOR DATA                           *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438004   *
* Acquisition date : 14-APR-2006 06:27:59 Detector SN#    : 1922864    *
* Detector ID      : GAMMA16              Sensitivity     : 3.000      *
* Geometry         : CAN                  Energy tolerance: 2.000      *
* Elapsed live time:    0 02:00:00.00     Abundance limit : 75.000     *
* Elapsed real time:    0 02:00:01.22     Half life ratio :  8.000     *
*************************************************************************
*                                                                       *
*                               SAMPLE DATA                             *
*                                                                       *
* Sample date      : 11-MAR-2006 07:38:00 Nuclide Library :             *
* Sample ID        : G158438004           Analyst initials: MJH1        *
* Batch Number     : 513807               Sample Quantity : 1.3995E+02 GRAM  *
* Recovery         :    1.00000           Carrier Weight :    0.00000  *
*************************************************************************
*                                                                       *
*                                 QC DATA                               *
* Standard Weight  :   0.00000                                          *
* CALIB. DATE/TIME :  5-APR-2006 19:34:04 MS Isotope      :             *
* MSD DPM          :    0.000             MSD Isotope     :             *
* LCS DPM          :    0.000             LCS Isotope     :             *
* LCSD DPM         :    0.000             LCSD Isotope    :             *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.378E+01	2.281E+00	5.418E-01	0.000E+00
CD-109	3.645E+00	1.151E+00	1.463E+00	0.000E+00
SN-126	3.548E-01	1.120E-01	1.436E-01	0.000E+00
TL-208	5.901E-01	8.531E-02	5.942E-02	0.000E+00
BI-211	3.122E+00	5.016E-01	3.043E-01	0.000E+00
BI-212	1.506E+00	4.284E-01	4.341E-01	0.000E+00
PB-212	1.849E+00	2.127E-01	9.784E-02	0.000E+00
BI-214	8.911E-01	1.549E-01	1.091E-01	0.000E+00
PB-214	1.086E+00	1.835E-01	1.030E-01	0.000E+00
RA-224	3.878E+00	1.403E+00	1.077E+00	0.000E+00
RA-226	8.911E-01	1.549E-01	1.091E-01	0.000E+00
AC-228	1.921E+00	3.429E-01	1.863E-01	0.000E+00
RA-228	1.921E+00	3.429E-01	1.863E-01	0.000E+00
TH-228	1.849E+00	2.127E-01	9.783E-02	0.000E+00
TH-230	8.911E-01	1.549E-01	1.091E-01	0.000E+00
TH-232	1.787E+00	2.056E-01	9.458E-02	0.000E+00
TH-234	1.588E+00	2.586E+00	2.973E+00	0.000E+00
U-234	1.183E+00	2.716E-01	2.250E-01	0.000E+00
NP-237	1.042E+00	3.931E-01	4.490E-01	0.000E+00
U-238	1.588E+00	2.586E+00	2.973E+00	0.000E+00
ANH-511	8.638E-02	6.614E-02	4.450E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	
BE-7	-3.738E-01		3.543E-01	5.942E-01	0.000E+00 NOT IDENT.
NA-22	1.802E-02		3.905E-02	6.683E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00		6.398E+14	0.000E+00	0.000E+00 SHORT HLIF
AL-26	-7.381E-03		3.066E-02	4.841E-02	0.000E+00 FAIL ABUN
SC-46	2.951E-02		4.169E-02	7.148E-02	0.000E+00 FAIL ABUN
V-48	-8.137E-02		1.475E-01	2.183E-01	0.000E+00 NOT IDENT.

CR-51	-4.735E-01	5.592E-01	9.098E-01	0.000E+00	NOT IDENT.
MN-54	8.048E-03	3.693E-02	6.581E-02	0.000E+00	NOT IDENT.
CO-56	-2.621E-03	4.086E-02	7.159E-02	0.000E+00	FAIL ABUN
MN-56	0.000E+00	1.584E+42	0.000E+00	0.000E+00	SHORT HLIF
CO-57	3.024E-03	2.331E-02	4.294E-02	0.000E+00	NOT IDENT.
CO-58	-2.691E-02	4.648E-02	6.563E-02	0.000E+00	NOT IDENT.
FE-59	-3.942E-03	1.077E-01	1.959E-01	0.000E+00	NOT IDENT.
CO-60	1.363E-03	3.395E-02	6.251E-02	0.000E+00	NOT IDENT.
ZN-65	-6.204E-03	8.212E-02	1.296E-01	0.000E+00	NOT IDENT.
SE-75	-1.063E-02	4.460E-02	7.700E-02	0.000E+00	NOT IDENT.
KR-85	9.683E+00	6.628E+00	1.199E+01	0.000E+00	NOT IDENT.
SR-85	6.052E-02	4.143E-02	7.492E-02	0.000E+00	NOT IDENT.
Y-88	-1.512E-02	2.757E-02	4.890E-02	0.000E+00	NOT IDENT.
Y-91	-1.677E-02	4.020E-02	7.023E-02	0.000E+00	NOT IDENT.
NB-94	1.402E-02	2.977E-02	5.486E-02	0.000E+00	NOT IDENT.
NB-95	-2.845E-03	7.361E-02	1.126E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	7.828E+01	0.000E+00	0.000E+00	SHORT HLIF
ZR-95	5.289E-02	8.581E-02	1.433E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.218E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.570E+39	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.392E-02	5.002E-02	8.762E-02	0.000E+00	FAIL ABUN
RH-106	1.158E-02	2.749E-01	4.970E-01	0.000E+00	FAIL ABUN
RU-106	2.967E-02	2.767E-01	5.028E-01	0.000E+00	NOT IDENT.
AG-108M	-4.688E-03	2.588E-02	4.710E-02	0.000E+00	NOT IDENT.
AG-110M	-7.635E-03	3.243E-02	5.677E-02	0.000E+00	NOT IDENT.
SN-113	2.465E-02	4.036E-02	7.751E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	3.233E+03	0.000E+00	0.000E+00	SHORT HLIF
SN-115	7.095E+00	5.620E+00	9.090E+00	0.000E+00	FAIL ABUN
SN-117M	5.773E-02	1.233E-01	2.270E-01	0.000E+00	NOT IDENT.
TE-123M	1.280E-02	2.712E-02	4.996E-02	0.000E+00	NOT IDENT.
SB-124	1.004E-01	8.327E-02	1.863E-01	0.000E+00	NOT IDENT.
SB-125	-1.475E-02	8.040E-02	1.457E-01	0.000E+00	FAIL ABUN
TE-125M	5.483E+00	1.000E+01	1.884E+01	0.000E+00	NOT IDENT.
I-126	1.157E-01	4.691E-01	8.484E-01	0.000E+00	FAIL ABUN
SB-126	3.160E-01	3.709E-01	7.031E-01	0.000E+00	FAIL ABUN
SB-127	0.000E+00	3.971E+01	0.000E+00	0.000E+00	SHORT HLIF
I-131	1.488E-01	5.349E-01	1.003E+00	0.000E+00	NOT IDENT.
I-132	0.000E+00	6.561E+41	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	3.798E+01	0.000E+00	0.000E+00	SHORT HLIF
BA-133	3.541E-03	3.939E-02	6.519E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.814E+10	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.043E-02	9.160E-02	0.000E+00	FAIL ABUN
CS-135	1.784E-01	1.645E-01	2.749E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.932E+36	0.000E+00	0.000E+00	SHORT HLIF
CS-136	2.728E-03	2.649E-01	4.850E-01	0.000E+00	FAIL ABUN
BA-137M	1.782E-02	3.380E-02	6.240E-02	0.000E+00	NOT IDENT.
CS-137	1.883E-02	3.573E-02	6.597E-02	0.000E+00	NOT IDENT.
CE-139	3.154E-03	2.791E-02	5.050E-02	0.000E+00	NOT IDENT.
BA-140	5.736E-01	7.206E-01	1.205E+00	0.000E+00	NOT IDENT.
LA-140	1.304E-01	1.970E-01	3.731E-01	0.000E+00	FAIL ABUN
CE-141	1.253E-01	8.189E-02	1.568E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.359E+06	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-1.105E-01	1.862E-01	3.288E-01	0.000E+00	NOT IDENT.
PM-144	5.992E-02	4.207E-02	6.537E-02	0.000E+00	FAIL ABUN
PR-144	0.000E+00	7.021E+40	0.000E+00	0.000E+00	SHORT HLIF
PM-146	2.455E-02	3.714E-02	7.098E-02	0.000E+00	NOT IDENT.
ND-147	5.735E-02	1.566E+00	2.853E+00	0.000E+00	FAIL ABUN
PM-147	-1.262E+04	4.691E+04	8.494E+04	0.000E+00	NOT IDENT.
PM-149	0.000E+00	3.048E+04	0.000E+00	0.000E+00	SHORT HLIF
EU-152	3.236E-02	8.671E-02	1.539E-01	0.000E+00	FAIL ABUN
GD-153	-6.378E-03	7.391E-02	1.366E-01	0.000E+00	FAIL ABUN
EU-154	4.984E-02	1.081E-01	1.849E-01	0.000E+00	NOT IDENT.
EU-155	1.667E-01	9.740E-02	1.903E-01	0.000E+00	FAIL ABUN
TB-160	-2.065E-02	1.526E-01	2.644E-01	0.000E+00	FAIL ABUN
TM-171	1.745E+01	3.571E+01	6.246E+01	0.000E+00	NOT IDENT.
HF-181	1.345E-02	4.818E-02	8.988E-02	0.000E+00	NOT IDENT.
TA-182	-8.934E-03	1.950E-01	3.486E-01	0.000E+00	FAIL ABUN
IR-192	3.286E-02	3.761E-02	6.894E-02	0.000E+00	FAIL ABUN
HG-203	1.026E-02	5.420E-02	8.552E-02	0.000E+00	FAIL ABUN
BI-207	6.914E-02	4.914E-02	9.959E-02	0.000E+00	NOT IDENT.
BI-210	3.719E+00	1.181E+01	1.944E+01	0.000E+00	NOT IDENT.
PB-210	3.719E+00	1.181E+01	1.944E+01	0.000E+00	NOT IDENT.
PB-211	1.908E-02	8.609E-01	1.403E+00	0.000E+00	NOT IDENT.
RN-219	-3.450E-03	3.614E-01	6.636E-01	0.000E+00	FAIL ABUN
RA-223	1.407E-01	7.048E-01	1.100E+00	0.000E+00	FAIL ABUN
AC-227	1.272E-01	3.679E-01	6.560E-01	0.000E+00	FAIL ABUN
TH-227	1.250E-01	3.617E-01	6.448E-01	0.000E+00	FAIL ABUN
TH-229	4.825E-01	4.800E-01	8.885E-01	0.000E+00	FAIL ABUN

PA-231	-4.702E-01	1.430E+00	2.440E+00	0.000E+00 FAIL ABUN
TH-231	0.000E+00	3.003E-01	3.700E-01	0.000E+00 FAIL ABUN
PA-233	5.075E-02	5.774E-02	1.060E-01	0.000E+00 FAIL ABUN
PA-234	-8.723E-02	2.510E-01	4.493E-01	0.000E+00 FAIL ABUN
PA-234M	9.753E-01	4.084E+00	7.640E+00	0.000E+00 NOT IDENT.
U-235	4.013E-02	1.859E-01	3.393E-01	0.000E+00 FAIL ABUN
NP-239	-1.738E-01	1.683E-01	2.940E-01	0.000E+00 FAIL ABUN
AM-241	-6.392E-02	2.328E-01	3.948E-01	0.000E+00 NOT IDENT.
AM-242	-1.598E-01	1.973E+00	3.633E+00	0.000E+00 NOT IDENT.
CM-247	7.525E-03	3.153E-02	5.887E-02	0.000E+00 FAIL ABUN
CF-249	4.224E-03	3.378E-02	6.282E-02	0.000E+00 NOT IDENT.
CF-251	-9.836E-02	1.156E-01	1.981E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 08:28:34.99

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438004.CNF;1
Sample date      : 11-MAR-2006 07:38:00 Acquisition date : 14-APR-2006 06:27:59
Sample ID        : G158438004           Sample quantity  : 1.39950E+02 GRAM
Detector name    : GAMMA16              Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.22  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513807               Detector SN#     : 1922864
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	1034	10.67*	1.093E+00	2.378E+01	2.378E+01	9.59
CD-109	88.03	227	3.79*	4.644E+00	3.464E+00	3.645E+00	31.58
SN-126	64.28	40	9.60	1.762E+00	6.286E-01	6.286E-01	162.56
	86.94	227	8.90	4.644E+00	1.475E+00	1.475E+00	51.31
	87.57	227	37.00*	4.644E+00	3.548E-01	3.548E-01	31.58
TL-208	75.00	282	3.43	3.310E+00	6.666E+00	6.895E+00	30.17
	277.35	117	6.80	4.101E+00	1.122E+00	1.160E+00	51.37
	510.84	87	21.60	2.691E+00	3.999E-01	4.136E-01	77.02
	583.14	437	84.20*	2.437E+00	5.705E-01	5.901E-01	14.46
	763.30	------	1.64	1.954E+00	------ Line Not Found		------
	860.37	54	12.46	1.757E+00	6.564E-01	6.789E-01	63.64
	1093.90	------	0.37	1.403E+00	------ Line Not Found		------
BI-211	351.07	525	12.94*	3.484E+00	3.122E+00	3.122E+00	16.07
BI-212	727.18	130	11.80*	2.038E+00	1.456E+00	1.506E+00	28.46
PB-212	74.80	282	10.70	3.310E+00	2.137E+00	2.210E+00	30.35
	87.30	227	8.00	4.644E+00	1.641E+00	1.698E+00	33.12
	115.19	------	0.60	5.993E+00	------ Line Not Found		------
	238.63	1349	44.60*	4.540E+00	1.787E+00	1.849E+00	11.51
	300.09	56	3.41	3.890E+00	1.141E+00	1.180E+00	90.74
BI-214	609.31	362	46.30*	2.356E+00	8.911E-01	8.911E-01	17.38
	768.36	17	5.04	1.943E+00	4.688E-01	4.688E-01	151.34
	934.06	34	3.21	1.628E+00	1.733E+00	1.733E+00	79.45
	1120.29	89	15.10	1.372E+00	1.150E+00	1.150E+00	47.28
	1238.11	32	5.94	1.252E+00	1.154E+00	1.154E+00	86.48
	1377.67	33	4.11	1.143E+00	1.859E+00	1.859E+00	86.74
PB-214	74.81	282	6.21	3.310E+00	3.682E+00	3.682E+00	29.81
	77.11	429	10.50	3.583E+00	3.061E+00	3.061E+00	22.65
	87.30	227	4.41	4.644E+00	2.977E+00	2.977E+00	32.61
	241.98	249	7.50	4.504E+00	1.975E+00	1.975E+00	36.59
	295.21	333	19.20	3.928E+00	1.183E+00	1.183E+00	22.96
	351.92	525	37.20*	3.484E+00	1.086E+00	1.086E+00	16.89
RA-226	295.21	333	19.20	3.928E+00	1.183E+00	1.183E+00	22.96

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	351.92	525	37.20	3.484E+00	1.086E+00	1.086E+00	15.84
	609.31	362	46.30*	2.356E+00	8.911E-01	8.911E-01	17.38
AC-228	209.25	174	4.40	4.951E+00	2.137E+00	2.161E+00	83.43
	338.32	299	11.40	3.578E+00	1.967E+00	1.989E+00	46.72
	463.01	72	4.40	2.887E+00	1.524E+00	1.541E+00	68.54
	794.95	64	4.60	1.887E+00	1.975E+00	1.997E+00	50.81
	911.21	327	27.70*	1.666E+00	1.900E+00	1.921E+00	17.85
	964.77	69	5.20	1.580E+00	2.269E+00	2.295E+00	41.74
	969.11	189	16.60	1.573E+00	1.945E+00	1.967E+00	30.54
RA-228	209.25	174	4.40	4.951E+00	2.137E+00	2.161E+00	83.43
	338.32	299	11.40	3.578E+00	1.967E+00	1.989E+00	46.72
	463.01	72	4.40	2.887E+00	1.524E+00	1.541E+00	68.54
	794.95	64	4.60	1.887E+00	1.975E+00	1.997E+00	50.81
	911.21	327	27.70*	1.666E+00	1.900E+00	1.921E+00	17.85
	964.77	69	5.20	1.580E+00	2.269E+00	2.295E+00	41.74
	969.11	189	16.60	1.573E+00	1.945E+00	1.967E+00	30.54
TH-228	84.40	83	1.21	4.328E+00	4.252E+00	4.399E+00	53.44
	238.60	1349	44.60*	4.540E+00	1.787E+00	1.849E+00	11.51
	300.10	56	3.41	3.890E+00	1.141E+00	1.180E+00	107.89
TH-230	295.21	333	19.20	3.928E+00	1.183E+00	1.183E+00	22.96
	351.92	525	37.20	3.484E+00	1.086E+00	1.086E+00	15.84
	609.31	362	46.30*	2.356E+00	8.911E-01	8.911E-01	17.38
TH-232	238.59	1349	44.60*	4.540E+00	1.787E+00	1.787E+00	11.51
	911.20	327	27.70	1.666E+00	1.900E+00	1.900E+00	17.85
	964.40	69	5.20	1.580E+00	2.269E+00	2.269E+00	41.74
	969.11	189	16.60	1.573E+00	1.945E+00	1.945E+00	30.54
TH-234	63.29	40	3.80*	1.762E+00	1.588E+00	1.588E+00	162.84
	92.38	208	5.41	5.086E+00	2.023E+00	2.023E+00	38.34
	112.81	------	0.24	5.950E+00	------ Line Not Found		------
U-234	67.67	------	0.37	2.385E+00	------ Line Not Found		------
	241.98	249	7.49	4.504E+00	1.977E+00	1.977E+00	36.60
	295.21	333	19.20*	3.928E+00	1.183E+00	1.183E+00	22.96
	351.92	525	37.20	3.484E+00	1.086E+00	1.086E+00	16.89
NP-237	86.48	227	12.60*	4.644E+00	1.042E+00	1.042E+00	37.72
	95.87	------	2.60	5.290E+00	------ Line Not Found		------
U-238	63.29	40	3.80*	1.762E+00	1.588E+00	1.588E+00	162.84
ANH-511	511.00	87	100.00*	2.691E+00	8.638E-02	8.638E-02	76.56

Nuclide Type: NATURAL

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-224	240.98	249	3.95*	4.504E+00	3.750E+00	3.878E+00	36.16

Flag: "*" = Keyline

Sample ID : G158438004 Acquisition date : 14-APR-2006 06:27:59

Total number of lines in spectrum	71	
Number of unidentified lines	25	
Number of lines tentatively identified by NID	46	64.79%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.378E+01	2.378E+01	0.228E+01	9.59	
CD-109	464.00D	1.05	3.464E+00	3.645E+00	1.151E+00	31.58	
SN-126	1.00E+05Y	1.00	3.548E-01	3.548E-01	1.120E-01	31.58	
TL-208	1.91Y	1.03	5.705E-01	5.901E-01	0.853E-01	14.46	
BI-211	7.04E+08Y	1.00	3.122E+00	3.122E+00	0.502E+00	16.07	
BI-212	1.91Y	1.03	1.456E+00	1.506E+00	0.428E+00	28.46	
PB-212	1.91Y	1.03	1.787E+00	1.849E+00	0.213E+00	11.51	
BI-214	1600.00Y	1.00	8.911E-01	8.911E-01	1.549E-01	17.38	
PB-214	1600.00Y	1.00	1.086E+00	1.086E+00	0.183E+00	16.89	
RA-226	1600.00Y	1.00	8.911E-01	8.911E-01	1.549E-01	17.38	
AC-228	5.75Y	1.01	1.900E+00	1.921E+00	0.343E+00	17.85	
RA-228	5.75Y	1.01	1.900E+00	1.921E+00	0.343E+00	17.85	
TH-228	1.91Y	1.03	1.787E+00	1.849E+00	0.213E+00	11.51	
TH-230	7.70E+04Y	1.00	8.911E-01	8.911E-01	1.549E-01	17.38	
TH-232	1.41E+10Y	1.00	1.787E+00	1.787E+00	0.206E+00	11.51	
TH-234	4.47E+09Y	1.00	1.588E+00	1.588E+00	2.586E+00	162.84	
U-234	2.45E+05Y	1.00	1.183E+00	1.183E+00	0.272E+00	22.96	
NP-237	2.14E+06Y	1.00	1.042E+00	1.042E+00	0.393E+00	37.72	
U-238	4.47E+09Y	1.00	1.588E+00	1.588E+00	2.586E+00	162.84	
ANH-511	1.00E+09Y	1.00	8.638E-02	8.638E-02	6.614E-02	76.56	
	Total Activity :		5.115E+01	5.157E+01			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-224	1.91Y	1.03	3.750E+00	3.878E+00	1.403E+00	36.16	
	Total Activity :		3.750E+00	3.878E+00			

Grand Total Activity : 5.490E+01 5.545E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.26	41	276	0.97	256.95	254	7	5.71E-03	****	6.08E+00	T
3	185.83	223	319	1.62	370.00	364	16	3.09E-02	33.9	5.33E+00	T
3	189.12	38	172	1.33	376.57	364	16	5.25E-03	****	5.27E+00	
0	224.59	36	186	1.27	447.48	444	7	4.93E-03	****	4.73E+00	T
0	270.40	164	192	1.45	539.03	534	12	2.27E-02	37.7	4.17E+00	T
0	307.22	15	84	0.78	612.64	610	5	2.14E-03	****	3.82E+00	T
0	328.34	63	219	1.01	654.85	649	12	8.79E-03	97.3	3.65E+00	T
0	409.25	57	116	1.56	816.59	811	11	7.93E-03	79.0	3.14E+00	
0	486.35	20	67	1.15	970.73	967	8	2.72E-03	****	2.79E+00	T
0	522.40	7	82	1.28	1042.80	1038	9	1.02E-03	****	2.65E+00	T
0	539.51	11	34	1.02	1077.02	1075	6	1.55E-03	****	2.58E+00	
0	639.47	20	81	3.29	1276.88	1269	13	2.81E-03	****	2.27E+00	
0	682.97	11	43	0.76	1363.86	1363	7	1.49E-03	****	2.15E+00	
0	696.75	44	55	2.52	1391.42	1386	10	6.11E-03	69.9	2.11E+00	T
0	753.90	4	44	0.47	1505.72	1505	6	5.15E-04	****	1.98E+00	T
0	771.42	23	60	1.18	1540.74	1538	10	3.20E-03	****	1.94E+00	T
0	785.32	21	39	3.19	1568.54	1566	9	2.86E-03	****	1.91E+00	T
0	813.32	29	36	0.96	1624.54	1620	11	3.97E-03	89.4	1.85E+00	T
0	892.47	15	20	1.45	1782.87	1781	8	2.08E-03	****	1.70E+00	
3	903.61	30	35	2.40	1805.14	1796	30	4.16E-03	95.5	1.68E+00	
0	940.16	11	13	1.07	1878.26	1875	6	1.54E-03	****	1.62E+00	
0	987.60	9	39	1.74	1973.14	1967	12	1.29E-03	****	1.54E+00	
0	1086.79	19	28	1.52	2171.57	2166	10	2.63E-03	****	1.41E+00	
0	1180.18	18	39	1.14	2358.42	2356	10	2.43E-03	****	1.31E+00	
0	1277.65	54	18	6.92	2553.46	2545	18	7.50E-03	45.8	1.22E+00	
0	1345.89	16	18	3.05	2690.02	2684	15	2.21E-03	****	1.16E+00	
0	1477.44	11	3	0.60	2953.30	2952	5	1.48E-03	77.8	1.08E+00	
0	1492.86	17	5	4.33	2984.16	2978	17	2.29E-03	78.9	1.08E+00	
0	1501.27	14	4	3.48	3000.99	2996	13	1.98E-03	84.0	1.07E+00	
0	1586.29	25	12	1.76	3171.17	3168	10	3.52E-03	62.2	1.03E+00	
0	1591.50	26	2	2.26	3181.60	3177	11	3.58E-03	50.4	1.03E+00	
0	1614.11	7	3	3.69	3226.87	3221	10	9.03E-04	****	1.02E+00	
0	1636.09	5	6	1.72	3270.86	3269	7	6.52E-04	****	1.02E+00	
0	1649.70	5	4	0.89	3298.11	3297	5	6.71E-04	****	1.01E+00	
0	1660.55	6	2	0.69	3319.83	3316	8	8.31E-04	****	1.01E+00	
0	1728.14	27	0	2.50	3455.15	3450	11	3.75E-03	38.5	9.89E-01	
0	1736.97	20	6	3.53	3472.83	3462	24	2.78E-03	78.6	9.87E-01	
0	1763.40	54	23	2.31	3525.74	3517	18	7.53E-03	50.6	9.82E-01	
0	1789.95	16	10	7.63	3578.90	3571	19	2.15E-03	****	9.77E-01	T
0	1810.79	8	0	1.50	3620.63	3617	10	1.11E-03	70.7	9.73E-01	T

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 08:28:41.02

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438004.CNF;1     *
* Acquisition date : 14-APR-2006 06:27:59  Detector SN#    : 1922864          *
* Detector ID      : GAMMA16               Sensitivity     : 3.00000          *
* Geometry         : CAN                   Energy tolerance: 2.00000          *
* Elapsed live time: 0 02:00:00.00         Abundance limit : 75.00000         *
* Elapsed real time: 0 02:00:01.22         Half life ratio : 8.00000          *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      : 11-MAR-2006 07:38:00  Nuclide Library : EPI              *
* Sample ID        : G158438004            Analyst initials: MJH1             *
* Batch Number     : 513807                Sample Quantity : 1.39950E+02 GRAM  *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
*                                                                       *
* CALIB. DATE/TIME : 5-APR-2006 19:34:04.74MS Isotope      :                 *
* MSD DPM          :                       MSD Isotope     :                 *
* LCS DPM          :                       LCS Isotope     :                 *
*************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.378E+01	2.281E+00	5.397E-01	3.563E-02	44.052
CD-109	3.645E+00	1.151E+00	1.377E+00	1.458E-01	2.646
SN-126	3.548E-01	1.120E-01	1.352E-01	1.429E-02	2.625
TL-208	5.901E-01	8.531E-02	5.807E-02	4.065E-03	10.161
BI-211	3.122E+00	5.016E-01	2.944E-01	2.160E-02	10.604
BI-212	1.506E+00	4.284E-01	4.262E-01	3.674E-02	3.533
PB-212	1.849E+00	2.127E-01	9.392E-02	8.888E-03	19.684
BI-214	8.911E-01	1.549E-01	1.068E-01	8.599E-03	8.347
PB-214	1.086E+00	1.835E-01	9.963E-02	8.957E-03	10.900
RA-224	3.878E+00	1.403E+00	1.034E+00	8.604E-02	3.752
RA-226	8.911E-01	1.549E-01	1.068E-01	8.599E-03	8.347
AC-228	1.921E+00	3.429E-01	1.837E-01	2.168E-02	10.458
RA-228	1.921E+00	3.429E-01	1.837E-01	2.168E-02	10.458
TH-228	1.849E+00	2.127E-01	9.391E-02	8.887E-03	19.686
TH-230	8.911E-01	1.549E-01	1.068E-01	8.599E-03	8.347
TH-232	1.787E+00	2.056E-01	9.079E-02	8.592E-03	19.686
TH-234	1.588E+00	2.586E+00	2.782E+00	5.535E-01	0.571
U-234	1.183E+00	2.716E-01	2.169E-01	2.171E-02	5.455

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NP-237	1.042E+00	3.931E-01	4.226E-01	9.788E-02	2.466
U-238	1.588E+00	2.586E+00	2.782E+00	5.535E-01	0.571
ANH-511	8.638E-02	6.614E-02	4.338E-02	2.639E-03	1.991

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.738E-01		3.543E-01	5.783E-01	4.014E-02	-0.646
NA-22	1.802E-02		3.905E-02	6.639E-02	4.314E-03	0.271
AL-26	-7.381E-03		3.066E-02	4.845E-02	2.787E-03	-0.152
SC-46	2.951E-02		4.169E-02	7.048E-02	6.531E-03	0.419
V-48	-8.137E-02		1.475E-01	2.157E-01	1.910E-02	-0.377
CR-51	-4.735E-01		5.592E-01	8.785E-01	6.987E-02	-0.539
MN-54	8.048E-03		3.693E-02	6.480E-02	5.475E-03	0.124
CO-56	-2.621E-03		4.086E-02	7.051E-02	6.082E-03	-0.037
CO-57	3.024E-03		2.331E-02	4.068E-02	3.152E-03	0.074
CO-58	-2.691E-02		4.648E-02	6.458E-02	5.247E-03	-0.417
FE-59	-3.942E-03		1.077E-01	1.940E-01	1.654E-02	-0.020
CO-60	1.363E-03		3.395E-02	6.216E-02	3.868E-03	0.022
ZN-65	-6.204E-03		8.212E-02	1.283E-01	9.720E-03	-0.048
SE-75	-1.063E-02		4.460E-02	7.407E-02	6.081E-03	-0.144
KR-85	9.683E+00		6.628E+00	1.169E+01	7.116E-01	0.829
SR-85	6.052E-02		4.143E-02	7.304E-02	4.447E-03	0.829
Y-88	-1.512E-02		2.757E-02	4.896E-02	2.786E-03	-0.309
Y-91	-1.677E-02		4.020E-02	6.857E-02	4.213E-03	-0.245
NB-94	1.402E-02		2.977E-02	5.382E-02	3.578E-03	0.261
NB-95	-2.845E-03		7.361E-02	1.106E-01	8.279E-03	-0.026
ZR-95	5.289E-02		8.581E-02	1.408E-01	1.177E-02	0.376
RU-103	-2.392E-02		5.002E-02	8.536E-02	1.090E-02	-0.280
RH-106	1.158E-02		2.749E-01	4.864E-01	2.998E-02	0.024
RU-106	2.967E-02		2.767E-01	4.920E-01	5.866E-02	0.060
AG-108M	-4.688E-03		2.588E-02	4.575E-02	2.922E-03	-0.102
AG-110M	-7.635E-03		3.243E-02	5.562E-02	3.615E-03	-0.137
SN-113	2.465E-02		4.036E-02	7.514E-02	4.609E-03	0.328
SN-115	7.095E+00	+	5.620E+00	8.971E+00	8.257E-01	0.791
SN-117M	5.773E-02		1.233E-01	2.162E-01	1.757E-02	0.267
TE-123M	1.280E-02		2.712E-02	4.758E-02	3.898E-03	0.269
SB-124	1.004E-01		8.327E-02	1.862E-01	1.212E-02	0.539
SB-125	-1.475E-02		8.040E-02	1.415E-01	8.661E-03	-0.104
TE-125M	5.483E+00		1.000E+01	1.782E+01	1.791E+00	0.308
I-126	1.157E-01		4.691E-01	8.314E-01	5.153E-02	0.139
SB-126	3.160E-01		3.709E-01	6.902E-01	4.745E-02	0.458
I-131	1.488E-01		5.349E-01	9.706E-01	7.132E-02	0.153
BA-133	3.541E-03		3.939E-02	6.307E-02	7.584E-03	0.056
CS-134	1.098E-01	+	5.043E-02	9.010E-02	7.160E-03	1.218
CS-135	1.784E-01		1.645E-01	2.645E-01	2.526E-02	0.675
CS-136	2.728E-03		2.649E-01	4.798E-01	4.176E-02	0.006

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BA-137M	1.782E-02		3.380E-02	6.115E-02	3.755E-03	0.291
CS-137	1.883E-02		3.573E-02	6.464E-02	3.985E-03	0.291
CE-139	3.154E-03		2.791E-02	4.813E-02	3.994E-03	0.066
BA-140	5.736E-01		7.206E-01	1.176E+00	3.831E-01	0.488
LA-140	1.304E-01		1.970E-01	3.724E-01	2.302E-02	0.350
CE-141	1.253E-01		8.189E-02	1.491E-01	1.200E-02	0.841
CE-144	-1.105E-01		1.862E-01	3.121E-01	4.711E-02	-0.354
PM-144	5.992E-02	+	4.207E-02	6.412E-02	4.225E-03	0.934
PM-146	2.455E-02		3.714E-02	6.902E-02	6.024E-03	0.356
ND-147	5.735E-02		1.566E+00	2.783E+00	3.802E-01	0.021
PM-147	-1.262E+04		4.691E+04	8.047E+04	6.239E+03	-0.157
EU-152	3.236E-02		8.671E-02	1.488E-01	1.126E-02	0.218
GD-153	-6.378E-03		7.391E-02	1.289E-01	1.176E-02	-0.049
EU-154	4.984E-02		1.081E-01	1.837E-01	1.797E-02	0.271
EU-155	1.667E-01		9.740E-02	1.798E-01	1.536E-02	0.927
TB-160	-2.065E-02		1.526E-01	2.606E-01	2.376E-02	-0.079
TM-171	1.745E+01		3.571E+01	5.850E+01	6.684E+00	0.298
HF-181	1.345E-02		4.818E-02	8.750E-02	5.274E-03	0.154
TA-182	-8.934E-03		1.950E-01	3.460E-01	2.312E-02	-0.026
IR-192	3.286E-02		3.761E-02	6.655E-02	5.000E-03	0.494
HG-203	1.026E-02		5.420E-02	8.235E-02	6.824E-03	0.125
BI-207	6.914E-02		4.914E-02	9.855E-02	8.019E-03	0.702
BI-210	3.719E+00		1.181E+01	1.809E+01	1.847E+00	0.206
PB-210	3.719E+00		1.181E+01	1.809E+01	1.847E+00	0.206
PB-211	1.908E-02		8.609E-01	1.361E+00	8.484E-01	0.014
RN-219	-3.450E-03		3.614E-01	6.437E-01	8.753E-02	-0.005
RA-223	1.407E-01		7.048E-01	1.062E+00	1.819E-01	0.132
AC-227	1.272E-01		3.679E-01	6.306E-01	9.642E-02	0.202
TH-227	1.250E-01		3.617E-01	6.198E-01	1.108E-01	0.202
TH-229	4.825E-01		4.800E-01	8.494E-01	7.103E-02	0.568
PA-231	-4.702E-01		1.430E+00	2.350E+00	3.484E-01	-0.200
TH-231	7.742E-01	+	3.003E-01	3.560E-01	3.291E-02	2.175
PA-233	5.075E-02		5.774E-02	1.023E-01	8.027E-03	0.496
PA-234	-8.723E-02		2.510E-01	4.435E-01	8.426E-02	-0.197
PA-234M	9.753E-01		4.084E+00	7.551E+00	7.575E-01	0.129
U-235	4.013E-02		1.859E-01	3.225E-01	5.528E-02	0.124
NP-239	-1.738E-01		1.683E-01	2.783E-01	2.191E-02	-0.624
AM-241	-6.392E-02		2.328E-01	3.690E-01	4.997E-02	-0.173
AM-242	-1.598E-01		1.973E+00	3.432E+00	2.933E-01	-0.047
CM-247	7.525E-03		3.153E-02	5.710E-02	3.303E-03	0.132
CF-249	4.224E-03		3.378E-02	6.089E-02	3.560E-03	0.069
CF-251	-9.836E-02		1.156E-01	1.890E-01	1.572E-02	-0.520

```
*************************************************************************
*                                                                       *
*                          General Engineering Labs, LLC                *
*                                2040 SAVAGE ROAD                       *
*                             CHARLESTON ,SC 29417                      *
*                              GROSS GAMMA REPORT                       *
*                                                                       *
*                                                                       *
*************************************************************************
*                                                                       *
*   BATCH ID     : 513807                    SAMPLE ID  : G158438004    *
*   ANALYST      : MJH1                      DETECTOR   : GAMMA16       *
*   SAMPLE DATE  : 11-MAR-2006 07:38:00.00  COUNT TIME :    0 02:00:00.00 *
*   ANALYSIS DATE: 14-APR-2006 06:27:59.00  SAMPLE ALQT:  139.950 GRAM  *
*                                                                       *
*************************************************************************
```

GROSS GAMMA ACTIVITY (pCi/GRAM)	: 9.865E+00
GROSS GAMMA ERROR (pCi/GRAM)	: 2.421E+00
GROSS GAMMA MDA (pCi/GRAM)	: 8.198E+00
GROSS GAMMA DLC (pCi/GRAM)	: 3.959E+00

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 08:29:20.52

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438005.CNF;1
Sample date      : 11-MAR-2006 07:48:00 Acquisition date : 14-APR-2006 06:28:38
Sample ID        : G158438005           Sample quantity  : 1.24330E+02 GRAM
Detector name    : HP                   Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.53  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513807               Detector SN#     : 8943324
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	10	63.16*	129	457	1.63	123.59	120	13	1.79E-02	31.5	1.97E+00
2	10	66.10*	52	376	1.07	129.47	120	13	7.25E-03	60.8	
3	3	71.43	72	395	1.31	140.13	137	20	9.95E-03	44.3	1.06E+00
4	3	74.90*	547	509	1.29	147.06	137	20	7.60E-02	8.5	
5	3	77.22*	723	365	1.07	151.72	137	20	1.00E-01	5.8	
6	5	84.37*	147	376	1.86	166.01	162	27	2.04E-02	23.5	2.68E+00
7	5	87.32	346	408	1.31	171.92	162	27	4.81E-02	11.5	
8	5	89.98*	255	390	1.27	177.25	162	27	3.54E-02	15.4	
9	5	92.84*	272	415	1.49	182.96	162	27	3.78E-02	16.7	
10	0	128.86	102	461	1.18	255.04	251	10	1.42E-02	40.5	
11	0	143.61*	57	315	1.70	284.56	281	8	7.91E-03	58.2	
12	0	179.49*	29	300	0.76	356.36	354	8	3.97E-03	108.7	
13	0	185.87*	178	404	1.45	369.14	365	11	2.47E-02	24.3	
14	0	209.35*	148	370	1.24	416.12	411	11	2.05E-02	27.2	
15	3	238.64*	1674	212	1.37	474.74	467	21	2.33E-01	2.9	2.13E+00
16	3	241.74	375	292	1.78	480.94	467	21	5.20E-02	11.6	
17	0	269.99*	157	293	1.65	537.46	531	13	2.18E-02	24.3	
18	0	277.35*	52	260	2.01	552.21	548	10	7.22E-03	60.3	
19	0	288.26*	56	114	2.24	574.04	571	7	7.82E-03	36.4	
20	1	295.18*	451	169	1.60	587.88	582	24	6.26E-02	7.5	1.90E+00
21	1	300.30*	89	187	1.60	598.12	582	24	1.24E-02	31.5	
22	0	327.84*	81	140	1.45	653.23	650	8	1.13E-02	28.2	
23	0	338.51*	317	295	1.52	674.60	667	15	4.41E-02	13.3	
24	0	351.86*	770	230	1.43	701.32	695	14	1.07E-01	5.6	
25	0	378.10*	25	181	2.11	753.82	750	13	3.49E-03	115.8	
26	0	409.62	42	134	1.47	816.91	813	8	5.81E-03	50.4	
27	0	445.78*	29	78	1.40	889.27	886	7	3.99E-03	55.9	
28	0	462.70*	197	176	2.35	923.12	915	18	2.74E-02	17.5	
29	0	510.59*	176	156	2.53	1018.98	1012	16	2.44E-02	20.8	
30	0	582.99*	578	142	1.55	1163.87	1157	13	8.03E-02	6.1	
31	0	609.09*	573	178	1.78	1216.10	1210	16	7.96E-02	6.8	
32	0	663.66	21	113	3.39	1325.32	1323	13	2.96E-03	104.2	
33	0	668.51	10	53	0.61	1335.02	1335	7	1.35E-03	126.7	
34	0	727.07*	129	70	1.69	1452.22	1447	12	1.79E-02	16.2	
35	0	768.02	49	93	1.54	1534.18	1528	11	6.81E-03	40.8	
36	0	785.72	44	98	1.04	1569.61	1564	15	6.07E-03	51.5	
37	0	795.11	78	91	2.33	1588.41	1580	14	1.08E-02	28.3	
38	0	827.18*	8	24	0.56	1652.58	1651	6	1.07E-03	117.0	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	4	830.51	31	22	1.64	1659.26	1656	17	4.37E-03	29.2	1.08E+00
40	4	834.96	46	35	2.76	1668.16	1656	17	6.46E-03	26.9	
41	0	860.54*	61	78	1.76	1719.36	1712	13	8.40E-03	32.9	
42	0	910.81*	418	126	2.01	1819.97	1810	21	5.81E-02	8.4	
43	0	933.65*	31	69	1.11	1865.69	1859	12	4.26E-03	57.8	
44	0	943.37	22	21	0.62	1885.14	1882	7	3.01E-03	41.2	
45	2	964.27	86	62	2.38	1926.97	1919	24	1.19E-02	24.4	1.78E+00
46	2	968.63*	236	64	2.05	1935.69	1919	24	3.28E-02	9.4	
47	0	984.05	23	45	1.82	1966.56	1961	9	3.25E-03	55.6	
48	0	1001.05*	38	53	1.83	2000.60	1992	15	5.33E-03	46.2	
49	0	1052.47	27	39	2.37	2103.51	2100	10	3.77E-03	46.6	
50	0	1064.59	23	28	1.74	2127.78	2124	8	3.15E-03	46.5	
51	0	1120.08	144	77	2.18	2238.84	2233	12	2.00E-02	14.8	
52	0	1225.59*	6	81	4.22	2450.03	2446	12	7.97E-04	22.9	
53	1	1278.59	38	11	2.36	2556.11	2552	17	5.32E-03	21.7	1.99E+00
54	1	1281.74	31	27	2.36	2562.43	2552	17	4.35E-03	41.6	
55	0	1307.49	24	30	0.63	2613.97	2609	13	3.33E-03	50.9	
56	0	1408.06	26	10	2.85	2815.27	2812	8	3.66E-03	28.4	
57	0	1460.46*	1414	61	2.72	2920.17	2909	22	1.96E-01	3.0	
58	0	1495.48	24	15	1.12	2990.28	2985	12	3.39E-03	37.5	
59	0	1588.34*	19	17	1.24	3176.17	3174	8	2.60E-03	45.6	
60	0	1630.95	16	20	1.17	3261.46	3258	15	2.27E-03	63.1	
61	0	1669.46	20	0	0.62	3338.55	3333	11	2.78E-03	22.4	
62	0	1729.41*	48	11	3.16	3458.57	3449	22	6.71E-03	23.0	
63	0	1764.41*	136	13	2.83	3528.63	3518	25	1.89E-02	11.5	
64	0	1805.06	7	8	2.34	3610.01	3608	10	9.49E-04	85.0	
65	0	1846.86	22	11	0.73	3693.70	3687	11	3.08E-03	35.9	
66	0	1891.02	12	2	0.65	3782.10	3778	8	1.68E-03	35.0	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

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*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                               DETECTOR DATA                           *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438005   *
* Acquisition date : 14-APR-2006 06:28:38 Detector SN#    : 8943324    *
* Detector ID      : HP                   Sensitivity     : 3.000      *
* Geometry         : CAN                  Energy tolerance: 2.000      *
* Elapsed live time:    0 02:00:00.00     Abundance limit : 75.000     *
* Elapsed real time:    0 02:00:01.53     Half life ratio :  8.000     *
*************************************************************************
*                                                                       *
*                               SAMPLE DATA                             *
*                                                                       *
* Sample date      : 11-MAR-2006 07:48:00 Nuclide Library :             *
* Sample ID        : G158438005           Analyst initials: MJH1        *
* Batch Number     : 513807               Sample Quantity : 1.2433E+02 GRAM  *
* Recovery         :    1.00000           Carrier Weight :    0.00000   *
*************************************************************************
*                                                                       *
*                                 QC DATA                               *
* Standard Weight  :   0.00000                                          *
* CALIB. DATE/TIME :  1-FEB-2006 10:50:52 MS Isotope      :             *
* MSD DPM          :    0.000            MSD Isotope     :             *
* LCS DPM          :    0.000            LCS Isotope     :             *
* LCSD DPM         :    0.000            LCSD Isotope    :             *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	1.977E+01	1.673E+00	3.386E-01	0.000E+00
MN-54	4.867E-02	2.648E-02	4.222E-02	0.000E+00
CD-109	3.601E+00	8.601E-01	9.618E-01	0.000E+00
SN-126	3.506E-01	8.374E-02	9.403E-02	0.000E+00
CS-135	4.322E-01	2.126E-01	1.783E-01	0.000E+00
CE-141	6.834E-02	8.141E-02	1.120E-01	0.000E+00
HG-203	4.995E-02	6.029E-02	6.437E-02	0.000E+00
TL-208	5.221E-01	7.687E-02	4.393E-02	0.000E+00
BI-211	3.090E+00	4.044E-01	2.182E-01	0.000E+00
BI-212	9.817E-01	3.329E-01	3.273E-01	0.000E+00
PB-212	1.596E+00	1.538E-01	6.963E-02	0.000E+00
BI-214	9.397E-01	1.558E-01	8.432E-02	0.000E+00
PB-214	1.075E+00	1.514E-01	7.605E-02	0.000E+00
RA-224	4.059E+00	9.761E-01	7.911E-01	0.000E+00
RA-226	9.397E-01	1.558E-01	8.432E-02	0.000E+00
AC-228	1.588E+00	3.212E-01	1.565E-01	0.000E+00
RA-228	1.588E+00	3.212E-01	1.565E-01	0.000E+00
TH-228	1.596E+00	1.538E-01	6.962E-02	0.000E+00
TH-230	9.396E-01	1.558E-01	8.432E-02	0.000E+00
TH-232	1.543E+00	1.487E-01	6.731E-02	0.000E+00
PA-234M	5.096E+00	4.729E+00	4.600E+00	0.000E+00
TH-234	2.080E+00	1.357E+00	1.524E+00	0.000E+00
U-234	1.092E+00	1.896E-01	1.459E-01	0.000E+00
U-235	1.802E-01	2.120E-01	2.843E-01	0.000E+00
NP-237	1.029E+00	3.250E-01	2.790E-01	0.000E+00
U-238	2.080E+00	1.357E+00	1.524E+00	0.000E+00
ANH-511	1.175E-01	4.957E-02	3.272E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)

BE-7	1.779E-01	2.658E-01	4.880E-01	0.000E+00	NOT IDENT.
NA-22	-1.986E-03	3.142E-02	4.715E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	5.162E+14	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-1.845E-04	1.773E-02	2.940E-02	0.000E+00	FAIL ABUN
SC-46	-4.729E-03	3.216E-02	5.673E-02	0.000E+00	FAIL ABUN
V-48	1.130E-01	1.260E-01	2.040E-01	0.000E+00	FAIL ABUN
CR-51	-5.044E-02	3.965E-01	7.051E-01	0.000E+00	NOT IDENT.
CO-56	-1.017E-02	2.828E-02	4.946E-02	0.000E+00	NOT IDENT.
MN-56	0.000E+00	2.781E+41	0.000E+00	0.000E+00	SHORT HLIF
CO-57	6.552E-03	1.997E-02	3.537E-02	0.000E+00	NOT IDENT.
CO-58	3.479E-04	2.995E-02	5.408E-02	0.000E+00	NOT IDENT.
FE-59	1.224E-02	7.992E-02	1.427E-01	0.000E+00	NOT IDENT.
CO-60	2.152E-02	2.443E-02	4.729E-02	0.000E+00	NOT IDENT.
ZN-65	5.679E-02	7.211E-02	1.188E-01	0.000E+00	NOT IDENT.
SE-75	-9.686E-03	3.221E-02	5.737E-02	0.000E+00	FAIL ABUN
KR-85	9.411E+00	5.530E+00	9.551E+00	0.000E+00	NOT IDENT.
SR-85	5.882E-02	3.456E-02	5.969E-02	0.000E+00	NOT IDENT.
Y-88	2.119E-02	2.169E-02	4.742E-02	0.000E+00	NOT IDENT.
Y-91	3.147E-03	2.846E-02	5.019E-02	0.000E+00	NOT IDENT.
NB-94	2.540E-04	2.354E-02	4.241E-02	0.000E+00	NOT IDENT.
NB-95	5.560E-02	5.540E-02	9.379E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	5.852E+01	0.000E+00	0.000E+00	SHORT HLIF
ZR-95	7.429E-02	6.351E-02	1.215E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.161E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.562E+39	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.141E-03	3.726E-02	6.498E-02	0.000E+00	FAIL ABUN
RH-106	-3.585E-03	2.245E-01	3.876E-01	0.000E+00	FAIL ABUN
RU-106	4.986E-02	2.216E-01	3.898E-01	0.000E+00	NOT IDENT.
AG-108M	-4.506E-03	2.159E-02	3.762E-02	0.000E+00	NOT IDENT.
AG-110M	-5.616E-03	2.414E-02	4.084E-02	0.000E+00	NOT IDENT.
SN-113	-3.873E-02	3.246E-02	5.317E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	2.264E+03	0.000E+00	0.000E+00	SHORT HLIF
SN-115	4.148E+00	4.805E+00	6.294E+00	0.000E+00	FAIL ABUN
SN-117M	3.653E-03	1.107E-01	1.907E-01	0.000E+00	NOT IDENT.
TE-123M	1.535E-02	2.447E-02	4.315E-02	0.000E+00	NOT IDENT.
SB-124	5.512E-03	5.723E-02	1.092E-01	0.000E+00	NOT IDENT.
SB-125	1.707E-03	5.800E-02	1.030E-01	0.000E+00	FAIL ABUN
TE-125M	2.040E+00	8.758E+00	1.551E+01	0.000E+00	NOT IDENT.
I-126	-5.559E-02	5.861E-01	6.138E-01	0.000E+00	NOT IDENT.
SB-126	3.785E-02	2.474E-01	4.545E-01	0.000E+00	NOT IDENT.
SB-127	0.000E+00	2.787E+01	0.000E+00	0.000E+00	SHORT HLIF
I-131	1.184E-01	3.831E-01	6.948E-01	0.000E+00	NOT IDENT.
I-132	0.000E+00	6.895E+41	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.875E+01	0.000E+00	0.000E+00	SHORT HLIF
BA-133	-2.335E-02	3.265E-02	4.805E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.292E+10	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.032E-02	6.476E-02	0.000E+00	FAIL ABUN
I-135	0.000E+00	1.376E+36	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-7.870E-02	2.105E-01	3.075E-01	0.000E+00	FAIL ABUN
BA-137M	1.831E-02	2.593E-02	4.202E-02	0.000E+00	NOT IDENT.
CS-137	1.923E-02	2.740E-02	4.439E-02	0.000E+00	NOT IDENT.
CE-139	-6.600E-03	2.395E-02	4.065E-02	0.000E+00	NOT IDENT.
BA-140	4.154E-01	4.888E-01	8.720E-01	0.000E+00	NOT IDENT.
LA-140	1.173E-02	1.387E-01	2.608E-01	0.000E+00	FAIL ABUN
CE-143	0.000E+00	4.476E+06	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-3.893E-02	1.582E-01	2.721E-01	0.000E+00	NOT IDENT.
PM-144	-4.022E-03	2.612E-02	4.403E-02	0.000E+00	NOT IDENT.
PR-144	0.000E+00	6.494E+41	0.000E+00	0.000E+00	SHORT HLIF
PM-146	2.488E-02	3.008E-02	5.542E-02	0.000E+00	NOT IDENT.
ND-147	-1.348E-01	1.116E+00	1.942E+00	0.000E+00	FAIL ABUN
PM-147	1.228E+03	3.973E+04	6.958E+04	0.000E+00	NOT IDENT.
PM-149	0.000E+00	2.468E+04	0.000E+00	0.000E+00	SHORT HLIF
EU-152	1.569E-02	6.501E-02	1.174E-01	0.000E+00	FAIL ABUN
GD-153	-6.426E-02	6.363E-02	1.077E-01	0.000E+00	FAIL ABUN
EU-154	-5.648E-03	8.691E-02	1.304E-01	0.000E+00	NOT IDENT.
EU-155	4.705E-02	8.157E-02	1.466E-01	0.000E+00	FAIL ABUN
TB-160	1.333E-02	1.063E-01	1.931E-01	0.000E+00	FAIL ABUN
TM-171	1.897E+01	2.310E+01	3.624E+01	0.000E+00	FAIL ABUN
HF-181	9.628E-03	3.785E-02	6.767E-02	0.000E+00	FAIL ABUN
TA-182	-5.860E-03	1.547E-01	2.318E-01	0.000E+00	FAIL ABUN
IR-192	-1.630E-03	2.807E-02	5.010E-02	0.000E+00	FAIL ABUN
BI-207	3.573E-02	3.332E-02	6.357E-02	0.000E+00	FAIL ABUN
BI-210	2.610E+00	2.085E+00	3.637E+00	0.000E+00	NOT IDENT.
PB-210	2.610E+00	2.085E+00	3.637E+00	0.000E+00	NOT IDENT.
PB-211	-9.862E-02	6.494E-01	1.131E+00	0.000E+00	FAIL ABUN
RN-219	-1.223E-01	2.833E-01	4.873E-01	0.000E+00	FAIL ABUN
RA-223	-4.030E-01	4.597E-01	7.753E-01	0.000E+00	FAIL ABUN
AC-227	-3.618E-02	2.681E-01	4.812E-01	0.000E+00	FAIL ABUN

TH-227	-3.556E-02	2.636E-01	4.729E-01	0.000E+00	FAIL ABUN
TH-229	-2.163E-01	3.815E-01	6.321E-01	0.000E+00	FAIL ABUN
PA-231	-5.552E-01	1.032E+00	1.803E+00	0.000E+00	FAIL ABUN
TH-231	0.000E+00	2.498E-01	2.801E-01	0.000E+00	FAIL ABUN
PA-233	-1.128E-03	4.503E-02	8.045E-02	0.000E+00	FAIL ABUN
PA-234	-1.071E-01	2.412E-01	3.514E-01	0.000E+00	FAIL ABUN
NP-239	3.144E-02	1.416E-01	2.503E-01	0.000E+00	FAIL ABUN
AM-241	-3.324E-03	1.103E-01	1.787E-01	0.000E+00	NOT IDENT.
AM-242	-6.898E-01	1.646E+00	2.850E+00	0.000E+00	NOT IDENT.
CM-247	-1.538E-03	2.520E-02	4.438E-02	0.000E+00	FAIL ABUN
CF-249	3.255E-02	2.598E-02	4.931E-02	0.000E+00	NOT IDENT.
CF-251	-6.739E-02	9.591E-02	1.588E-01	0.000E+00	NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 08:29:22.97

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438005.CNF;1
Sample date      : 11-MAR-2006 07:48:00 Acquisition date : 14-APR-2006 06:28:38
Sample ID        : G158438005           Sample quantity  : 1.24330E+02 GRAM
Detector name    : HP                   Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.53  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513807               Detector SN#     : 8943324
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	1414	10.67*	2.023E+00	1.977E+01	1.977E+01	8.46
MN-54	834.83	46	99.83*	3.115E+00	4.514E-02	4.867E-02	54.41
CD-109	88.03	346	3.79*	8.062E+00	3.422E+00	3.601E+00	23.89
SN-126	64.28	129	9.60	4.929E+00	8.233E-01	8.233E-01	64.52
	86.94	346	8.90	8.062E+00	1.457E+00	1.457E+00	46.98
	87.57	346	37.00*	8.062E+00	3.506E-01	3.506E-01	23.89
CS-135	268.24	157	16.00*	6.845E+00	4.322E-01	4.322E-01	49.18
CE-141	145.44	57	48.40*	9.085E+00	3.909E-02	8.071E-02	116.65
HG-203	70.83	72	4.75	6.283E+00	7.251E-01	1.202E+00	89.41
	72.87	72	8.00	6.283E+00	4.305E-01	7.137E-01	89.35
	82.60	147	3.55	7.810E+00	1.601E+00	2.654E+00	48.63
	279.20	52	77.30*	6.737E+00	3.013E-02	4.995E-02	120.70
TL-208	75.00	547	3.43	6.763E+00	7.123E+00	7.368E+00	20.10
	277.35	52	6.80	6.737E+00	3.425E-01	3.543E-01	121.01
	510.84	176	21.60	4.522E+00	5.438E-01	5.625E-01	43.01
	583.14	578	84.20*	4.109E+00	5.048E-01	5.221E-01	14.72
	763.30	------	1.64	3.345E+00	------ Line Not Found		------
	860.37	61	12.46	3.041E+00	4.822E-01	4.988E-01	66.52
	1093.90	------	0.37	2.507E+00	------ Line Not Found		------
BI-211	351.07	770	12.94*	5.814E+00	3.090E+00	3.090E+00	13.09
BI-212	727.18	129	11.80*	3.475E+00	9.491E-01	9.817E-01	33.91
PB-212	74.80	547	10.70	6.763E+00	2.283E+00	2.362E+00	20.36
	87.30	346	8.00	8.062E+00	1.621E+00	1.677E+00	25.90
	115.19	------	0.60	9.182E+00	------ Line Not Found		------
	238.63	1674	44.60*	7.347E+00	1.543E+00	1.596E+00	9.64
	300.09	89	3.41	6.421E+00	1.227E+00	1.269E+00	63.62
BI-214	609.31	573	46.30*	3.978E+00	9.396E-01	9.397E-01	16.58
	768.36	49	5.04	3.329E+00	8.819E-01	8.820E-01	82.20
	934.06	31	3.21	2.847E+00	1.013E+00	1.014E+00	116.00
	1120.29	144	15.10	2.461E+00	1.169E+00	1.169E+00	31.14
	1238.11	------	5.94	2.277E+00	------ Line Not Found		------
	1377.67	------	4.11	2.105E+00	------ Line Not Found		------

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PB-214	74.81	547	6.21	6.763E+00	3.934E+00	3.935E+00	19.55
	77.11	723	10.50	7.057E+00	2.944E+00	2.944E+00	15.19
	87.30	346	4.41	8.062E+00	2.941E+00	2.941E+00	25.24
	241.98	375	7.50	7.294E+00	2.067E+00	2.067E+00	24.69
	295.21	451	19.20	6.489E+00	1.092E+00	1.092E+00	17.36
	351.92	770	37.20*	5.814E+00	1.075E+00	1.075E+00	14.09
RA-226	295.21	451	19.20	6.489E+00	1.092E+00	1.092E+00	17.36
	351.92	770	37.20	5.814E+00	1.075E+00	1.075E+00	12.80
	609.31	573	46.30*	3.978E+00	9.396E-01	9.397E-01	16.58
AC-228	209.25	148	4.40	7.875E+00	1.286E+00	1.300E+00	83.89
	338.32	317	11.40	5.959E+00	1.410E+00	1.426E+00	48.74
	463.01	197	4.40	4.845E+00	2.796E+00	2.827E+00	42.19
	794.95	78	4.60	3.239E+00	1.579E+00	1.596E+00	61.33
	911.21	418	27.70*	2.905E+00	1.570E+00	1.588E+00	20.23
	964.77	86	5.20	2.774E+00	1.795E+00	1.815E+00	54.55
	969.11	236	16.60	2.764E+00	1.555E+00	1.572E+00	29.88
RA-228	209.25	148	4.40	7.875E+00	1.286E+00	1.300E+00	83.89
	338.32	317	11.40	5.959E+00	1.410E+00	1.426E+00	48.74
	463.01	197	4.40	4.845E+00	2.796E+00	2.827E+00	42.19
	794.95	78	4.60	3.239E+00	1.579E+00	1.596E+00	61.33
	911.21	418	27.70*	2.905E+00	1.570E+00	1.588E+00	20.23
	964.77	86	5.20	2.774E+00	1.795E+00	1.815E+00	54.55
	969.11	236	16.60	2.764E+00	1.555E+00	1.572E+00	29.88
TH-228	84.40	147	1.21	7.810E+00	4.698E+00	4.859E+00	48.47
	238.60	1674	44.60*	7.347E+00	1.543E+00	1.596E+00	9.64
	300.10	89	3.41	6.421E+00	1.227E+00	1.269E+00	86.33
TH-230	295.21	451	19.20	6.489E+00	1.092E+00	1.092E+00	17.36
	351.92	770	37.20	5.814E+00	1.075E+00	1.075E+00	12.80
	609.31	573	46.30*	3.978E+00	9.396E-01	9.396E-01	16.58
TH-232	238.59	1674	44.60*	7.347E+00	1.543E+00	1.543E+00	9.64
	911.20	418	27.70	2.905E+00	1.570E+00	1.570E+00	20.23
	964.40	86	5.20	2.774E+00	1.795E+00	1.795E+00	54.55
	969.11	236	16.60	2.764E+00	1.555E+00	1.555E+00	29.88
PA-234M	766.40	49	0.21	3.329E+00	2.117E+01	2.117E+01	111.92
	1001.03	38	0.85*	2.692E+00	5.096E+00	5.096E+00	92.79
TH-234	63.29	129	3.80*	4.929E+00	2.080E+00	2.080E+00	65.23
	92.38	272	5.41	8.449E+00	1.796E+00	1.796E+00	37.62
	112.81	------	0.24	9.151E+00	------ Line Not Found		------
U-234	67.67	52	0.37	5.442E+00	7.769E+00	7.769E+00	122.32
	241.98	375	7.49	7.294E+00	2.070E+00	2.070E+00	24.69
	295.21	451	19.20*	6.489E+00	1.092E+00	1.092E+00	17.36
	351.92	770	37.20	5.814E+00	1.075E+00	1.075E+00	14.09
U-235	89.95	255	2.70	8.262E+00	3.448E+00	3.448E+00	43.30
	93.35	272	4.50	8.449E+00	2.159E+00	2.159E+00	43.28
	105.00	------	2.10	8.983E+00	------ Line Not Found		------
	143.76	57	10.50*	9.085E+00	1.802E-01	1.802E-01	117.63
	163.33	------	4.70	8.765E+00	------ Line Not Found		------
	185.71	178	54.00	8.331E+00	1.192E-01	1.192E-01	48.91
	205.31	------	5.00	7.952E+00	------ Line Not Found		------

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
NP-237	86.48	346	12.60*	8.062E+00	1.029E+00	1.029E+00	31.57
	95.87	------	2.60	8.620E+00	------ Line Not Found		------
U-238	63.29	129	3.80*	4.929E+00	2.080E+00	2.080E+00	65.23
ANH-511	511.00	176	100.00*	4.522E+00	1.175E-01	1.175E-01	42.20

Nuclide Type: NATURAL

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-224	240.98	375	3.95*	7.294E+00	3.924E+00	4.059E+00	24.05

Flag: "*" = Keyline

Sample ID : G158438005 Acquisition date : 14-APR-2006 06:28:38

Total number of lines in spectrum	66	
Number of unidentified lines	18	
Number of lines tentatively identified by NID	48	72.73%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.977E+01	1.977E+01	0.167E+01	8.46	
MN-54	312.70D	1.08	4.514E-02	4.867E-02	2.648E-02	54.41	
CD-109	464.00D	1.05	3.422E+00	3.601E+00	0.860E+00	23.89	
SN-126	1.00E+05Y	1.00	3.506E-01	3.506E-01	0.837E-01	23.89	
CS-135	2.30E+06Y	1.00	4.322E-01	4.322E-01	2.126E-01	49.18	
CE-141	32.50D	2.06	3.909E-02	8.071E-02	9.414E-02	116.65	
HG-203	46.61D	1.66	3.013E-02	4.995E-02	6.029E-02	120.70	
TL-208	1.91Y	1.03	5.048E-01	5.221E-01	0.769E-01	14.72	
BI-211	7.04E+08Y	1.00	3.090E+00	3.090E+00	0.404E+00	13.09	
BI-212	1.91Y	1.03	9.491E-01	9.817E-01	3.329E-01	33.91	
PB-212	1.91Y	1.03	1.543E+00	1.596E+00	0.154E+00	9.64	
BI-214	1600.00Y	1.00	9.396E-01	9.397E-01	1.558E-01	16.58	
PB-214	1600.00Y	1.00	1.075E+00	1.075E+00	0.151E+00	14.09	
RA-226	1600.00Y	1.00	9.396E-01	9.397E-01	1.558E-01	16.58	
AC-228	5.75Y	1.01	1.570E+00	1.588E+00	0.321E+00	20.23	
RA-228	5.75Y	1.01	1.570E+00	1.588E+00	0.321E+00	20.23	
TH-228	1.91Y	1.03	1.543E+00	1.596E+00	0.154E+00	9.64	
TH-230	7.70E+04Y	1.00	9.396E-01	9.396E-01	1.558E-01	16.58	
TH-232	1.41E+10Y	1.00	1.543E+00	1.543E+00	0.149E+00	9.64	
PA-234M	4.47E+09Y	1.00	5.096E+00	5.096E+00	4.729E+00	92.79	
TH-234	4.47E+09Y	1.00	2.080E+00	2.080E+00	1.357E+00	65.23	
U-234	2.45E+05Y	1.00	1.092E+00	1.092E+00	0.190E+00	17.36	
U-235	7.04E+08Y	1.00	1.802E-01	1.802E-01	2.120E-01	117.63	
NP-237	2.14E+06Y	1.00	1.029E+00	1.029E+00	0.325E+00	31.57	
U-238	4.47E+09Y	1.00	2.080E+00	2.080E+00	1.357E+00	65.23	
ANH-511	1.00E+09Y	1.00	1.175E-01	1.175E-01	0.496E-01	42.20	
			---------	---------			
	Total Activity :		5.197E+01	5.241E+01			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-224	1.91Y	1.03	3.924E+00	4.059E+00	0.976E+00	24.05	
			---------	---------			
	Total Activity :		3.924E+00	4.059E+00			

Grand Total Activity :	5.590E+01	5.647E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.86	102	461	1.18	255.04	251	10	1.42E-02	81.0	9.22E+00	
0	179.49	29	300	0.76	356.36	354	8	3.97E-03	****	8.46E+00	T
0	288.26	56	114	2.24	574.04	571	7	7.82E-03	72.8	6.58E+00	T
0	327.84	81	140	1.45	653.23	650	8	1.13E-02	56.4	6.08E+00	T
0	378.10	25	181	2.11	753.82	750	13	3.49E-03	****	5.55E+00	
0	409.62	42	134	1.47	816.91	813	8	5.81E-03	****	5.26E+00	T
0	445.78	29	78	1.40	889.27	886	7	3.99E-03	****	4.97E+00	T
0	663.66	21	113	3.39	1325.32	1323	13	2.96E-03	****	3.73E+00	T
0	668.51	10	53	0.61	1335.02	1335	7	1.35E-03	****	3.71E+00	T
0	785.72	44	98	1.04	1569.61	1564	15	6.07E-03	****	3.27E+00	
0	827.18	8	24	0.56	1652.58	1651	6	1.07E-03	****	3.14E+00	T
4	830.51	31	22	1.64	1659.26	1656	17	4.37E-03	58.5	3.13E+00	T
0	943.37	22	21	0.62	1885.14	1882	7	3.01E-03	82.4	2.82E+00	T
0	984.05	23	45	1.82	1966.56	1961	9	3.25E-03	****	2.73E+00	T
0	1052.47	27	39	2.37	2103.51	2100	10	3.77E-03	93.2	2.59E+00	
0	1064.59	23	28	1.74	2127.78	2124	8	3.15E-03	93.0	2.56E+00	T
0	1225.59	6	81	4.22	2450.03	2446	12	7.97E-04	****	2.29E+00	
1	1278.59	38	11	2.36	2556.11	2552	17	5.32E-03	43.4	2.22E+00	
1	1281.74	31	27	2.36	2562.43	2552	17	4.35E-03	83.2	2.22E+00	
0	1307.49	24	30	0.63	2613.97	2609	13	3.33E-03	****	2.19E+00	
0	1408.06	26	10	2.85	2815.27	2812	8	3.66E-03	56.7	2.07E+00	
0	1495.48	24	15	1.12	2990.28	2985	12	3.39E-03	75.1	1.99E+00	
0	1588.34	19	17	1.24	3176.17	3174	8	2.60E-03	91.2	1.92E+00	
0	1630.95	16	20	1.17	3261.46	3258	15	2.27E-03	****	1.89E+00	
0	1669.46	20	0	0.62	3338.55	3333	11	2.78E-03	44.7	1.87E+00	
0	1729.41	48	11	3.16	3458.57	3449	22	6.71E-03	46.0	1.83E+00	
0	1764.41	136	13	2.83	3528.63	3518	25	1.89E-02	23.0	1.82E+00	
0	1805.06	7	8	2.34	3610.01	3608	10	9.49E-04	****	1.80E+00	
0	1846.86	22	11	0.73	3693.70	3687	11	3.08E-03	71.8	1.78E+00	
0	1891.02	12	2	0.65	3782.10	3778	8	1.68E-03	70.1	1.77E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 08:29:41.28

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158438005.CNF;1     *
* Acquisition date : 14-APR-2006 06:28:38  Detector SN#    : 8943324          *
* Detector ID      : HP                    Sensitivity     : 3.00000          *
* Geometry         : CAN                   Energy tolerance: 2.00000          *
* Elapsed live time: 0 02:00:00.00         Abundance limit : 75.00000         *
* Elapsed real time: 0 02:00:01.53         Half life ratio : 8.00000          *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      : 11-MAR-2006 07:48:00  Nuclide Library : EPI              *
* Sample ID        : G158438005            Analyst initials: MJH1             *
* Batch Number     : 513807                Sample Quantity : 1.24330E+02 GRAM  *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
*                                                                       *
* CALIB. DATE/TIME : 1-FEB-2006 10:50:52.50MS Isotope      :                *
* MSD DPM          :                       MSD Isotope     :                *
* LCS DPM          :                       LCS Isotope     :                *
*************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	1.977E+01	1.673E+00	3.390E-01	1.996E-02	58.338
MN-54	4.867E-02	2.648E-02	4.193E-02	3.627E-03	1.161
CD-109	3.601E+00	8.601E-01	9.269E-01	6.242E-02	3.885
SN-126	3.506E-01	8.374E-02	9.061E-02	6.078E-03	3.869
CS-135	4.322E-01	2.126E-01	1.744E-01	1.394E-02	2.478
CE-141	6.834E-02	8.141E-02	1.086E-01	6.771E-03	0.629
HG-203	4.995E-02	6.029E-02	6.298E-02	4.140E-03	0.793
TL-208	5.221E-01	7.687E-02	4.342E-02	3.631E-03	12.025
BI-211	3.090E+00	4.044E-01	2.142E-01	1.431E-02	14.426
BI-212	9.817E-01	3.329E-01	3.245E-01	3.231E-02	3.026
PB-212	1.596E+00	1.538E-01	6.799E-02	5.200E-03	23.470
BI-214	9.397E-01	1.558E-01	8.339E-02	7.894E-03	11.268
PB-214	1.075E+00	1.514E-01	7.465E-02	6.327E-03	14.400
RA-224	4.059E+00	9.761E-01	7.726E-01	4.790E-02	5.254
RA-226	9.397E-01	1.558E-01	8.339E-02	7.894E-03	11.268
AC-228	1.588E+00	3.212E-01	1.556E-01	1.740E-02	10.203
RA-228	1.588E+00	3.212E-01	1.556E-01	1.740E-02	10.203
TH-228	1.596E+00	1.538E-01	6.798E-02	5.199E-03	23.472

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-230	9.396E-01	1.558E-01	8.339E-02	7.894E-03	11.268
TH-232	1.543E+00	1.487E-01	6.572E-02	5.026E-03	23.472
PA-234M	5.096E+00	4.729E+00	4.581E+00	4.284E-01	1.113
TH-234	2.080E+00	1.357E+00	1.462E+00	2.475E-01	1.422
U-234	1.092E+00	1.896E-01	1.429E-01	1.261E-02	7.642
U-235	1.802E-01	2.120E-01	2.757E-01	4.517E-02	0.654
NP-237	1.029E+00	3.250E-01	2.688E-01	5.826E-02	3.830
U-238	2.080E+00	1.357E+00	1.462E+00	2.475E-01	1.422
ANH-511	1.175E-01	4.957E-02	3.228E-02	2.256E-03	3.639

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.779E-01		2.658E-01	4.810E-01	3.614E-02	0.370
NA-22	-1.986E-03		3.142E-02	4.711E-02	2.690E-03	-0.042
AL-26	-1.845E-04		1.773E-02	2.953E-02	1.656E-03	-0.006
SC-46	-4.729E-03		3.216E-02	5.640E-02	4.861E-03	-0.084
V-48	1.130E-01	+	1.260E-01	2.031E-01	1.637E-02	0.556
CR-51	-5.044E-02		3.965E-01	6.912E-01	4.705E-02	-0.073
CO-56	-1.017E-02		2.828E-02	4.914E-02	4.249E-03	-0.207
CO-57	6.552E-03		1.997E-02	3.423E-02	2.123E-03	0.191
CO-58	3.479E-04		2.995E-02	5.369E-02	4.653E-03	0.006
FE-59	1.224E-02		7.992E-02	1.423E-01	1.119E-02	0.086
CO-60	2.152E-02		2.443E-02	4.728E-02	2.533E-03	0.455
ZN-65	5.679E-02		7.211E-02	1.185E-01	8.128E-03	0.479
SE-75	-9.686E-03		3.221E-02	5.610E-02	3.528E-03	-0.173
KR-85	9.411E+00		5.530E+00	9.423E+00	6.613E-01	0.999
SR-85	5.882E-02		3.456E-02	5.889E-02	4.133E-03	0.999
Y-88	2.119E-02		2.169E-02	4.763E-02	2.673E-03	0.445
Y-91	3.147E-03		2.846E-02	4.958E-02	3.684E-03	0.063
NB-94	2.540E-04		2.354E-02	4.203E-02	3.578E-03	0.006
NB-95	5.560E-02		5.540E-02	9.305E-02	8.022E-03	0.598
ZR-95	7.429E-02		6.351E-02	1.205E-01	1.142E-02	0.617
RU-103	-3.141E-03		3.726E-02	6.409E-02	8.436E-03	-0.049
RH-106	-3.585E-03		2.245E-01	3.834E-01	3.083E-02	-0.009
RU-106	4.986E-02		2.216E-01	3.856E-01	5.010E-02	0.129
AG-108M	-4.506E-03		2.159E-02	3.703E-02	2.488E-03	-0.122
AG-110M	-5.616E-03		2.414E-02	4.043E-02	3.494E-03	-0.139
SN-113	-3.873E-02		3.246E-02	5.226E-02	3.258E-03	-0.741
SN-115	4.148E+00	+	4.805E+00	6.261E+00	5.263E-01	0.663
SN-117M	3.653E-03		1.107E-01	1.852E-01	1.107E-02	0.020
TE-123M	1.535E-02		2.447E-02	4.191E-02	2.537E-03	0.366
SB-124	5.512E-03		5.723E-02	1.095E-01	6.725E-03	0.050
SB-125	1.707E-03		5.800E-02	1.014E-01	6.514E-03	0.017
TE-125M	2.040E+00		8.758E+00	1.499E+01	1.273E+00	0.136
I-126	-5.559E-02		5.861E-01	6.078E-01	5.122E-02	-0.091
SB-126	3.785E-02		2.474E-01	4.505E-01	3.851E-02	0.084

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-131	1.184E-01		3.831E-01	6.823E-01	4.739E-02	0.174
BA-133	-2.335E-02		3.265E-02	4.717E-02	5.514E-03	-0.495
CS-134	8.773E-02	+	5.032E-02	6.428E-02	5.585E-03	1.365
CS-136	-7.870E-02		2.105E-01	3.064E-01	2.442E-02	-0.257
BA-137M	1.831E-02		2.593E-02	4.161E-02	3.502E-03	0.440
CS-137	1.923E-02		2.740E-02	4.395E-02	3.706E-03	0.437
CE-139	-6.600E-03		2.395E-02	3.950E-02	2.361E-03	-0.167
BA-140	4.154E-01		4.888E-01	8.609E-01	2.825E-01	0.483
LA-140	1.173E-02		1.387E-01	2.615E-01	1.467E-02	0.045
CE-144	-3.893E-02		1.582E-01	2.636E-01	3.774E-02	-0.148
PM-144	-4.022E-03		2.612E-02	4.362E-02	3.715E-03	-0.092
PM-146	2.488E-02		3.008E-02	5.459E-02	4.950E-03	0.456
ND-147	-1.348E-01		1.116E+00	1.917E+00	2.717E-01	-0.070
PM-147	1.228E+03		3.973E+04	6.733E+04	4.163E+03	0.018
EU-152	1.569E-02		6.501E-02	1.152E-01	7.844E-03	0.136
GD-153	-6.426E-02		6.363E-02	1.040E-01	6.615E-03	-0.618
EU-154	-5.648E-03		8.691E-02	1.303E-01	1.209E-02	-0.043
EU-155	4.705E-02		8.157E-02	1.416E-01	9.008E-03	0.332
TB-160	1.333E-02		1.063E-01	1.919E-01	1.656E-02	0.069
TM-171	1.897E+01	+	2.310E+01	3.480E+01	2.108E+00	0.545
HF-181	9.628E-03		3.785E-02	6.671E-02	4.479E-03	0.144
TA-182	-5.860E-03		1.547E-01	2.315E-01	1.382E-02	-0.025
IR-192	-1.630E-03		2.807E-02	4.910E-02	3.054E-03	-0.033
BI-207	3.573E-02	+	3.332E-02	6.336E-02	4.673E-03	0.564
BI-210	2.610E+00		2.085E+00	3.476E+00	2.627E-01	0.751
PB-210	2.610E+00		2.085E+00	3.476E+00	2.627E-01	0.751
PB-211	-9.862E-02		6.494E-01	1.112E+00	6.936E-01	-0.089
RN-219	-1.223E-01		2.833E-01	4.791E-01	6.549E-02	-0.255
RA-223	-4.030E-01		4.597E-01	7.602E-01	1.266E-01	-0.530
AC-227	-3.618E-02		2.681E-01	4.703E-01	6.729E-02	-0.077
TH-227	-3.556E-02		2.636E-01	4.622E-01	7.881E-02	-0.077
TH-229	-2.163E-01		3.815E-01	6.155E-01	3.731E-02	-0.351
PA-231	-5.552E-01		1.032E+00	1.764E+00	2.464E-01	-0.315
TH-231	5.085E-01	+	2.498E-01	2.740E-01	2.093E-02	1.856
PA-233	-1.128E-03		4.503E-02	7.884E-02	5.155E-03	-0.014
PA-234	-1.071E-01		2.412E-01	3.496E-01	6.513E-02	-0.306
NP-239	3.144E-02		1.416E-01	2.421E-01	1.493E-02	0.130
AM-241	-3.324E-03		1.103E-01	1.713E-01	1.210E-02	-0.019
AM-242	-6.898E-01		1.646E+00	2.752E+00	1.717E-01	-0.251
CM-247	-1.538E-03		2.520E-02	4.365E-02	2.598E-03	-0.035
CF-249	3.255E-02		2.598E-02	4.847E-02	2.846E-03	0.671
CF-251	-6.739E-02		9.591E-02	1.545E-01	9.272E-03	-0.436

```
*****************************************************************************
*                                                                           *
*                          General Engineering Labs, LLC                    *
*                                2040 SAVAGE ROAD                           *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID     : 513807                    SAMPLE ID  : G158438005        *
*   ANALYST      : MJH1                      DETECTOR   : HP                *
*   SAMPLE DATE  : 11-MAR-2006 07:48:00.00   COUNT TIME :    0 02:00:00.00 *
*   ANALYSIS DATE: 14-APR-2006 06:28:38.73   SAMPLE ALQT:  124.330 GRAM     *
*                                                                           *
*****************************************************************************
```

GROSS GAMMA ACTIVITY (pCi/GRAM)	: 8.523E+00
GROSS GAMMA ERROR (pCi/GRAM)	: 1.840E+00
GROSS GAMMA MDA (pCi/GRAM)	: 5.177E+00
GROSS GAMMA DLC (pCi/GRAM)	: 2.511E+00

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 08:30:15.96

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055620.CNF;1
Sample date      : 25-MAR-2006 00:00:00 Acquisition date : 14-APR-2006 06:29:23
Sample ID        : G1201055620          Sample quantity  : 1.49620E+02 GRAM
Detector name    : GAMMA9               Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.00  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513807               Detector SN#     : 10017452
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	66.65	28	75	1.53	133.24	120	22	3.82E-03	59.5	1.30E+00
2	0	74.13*	26	80	1.82	148.18	144	8	3.67E-03	66.2	
3	0	85.05*	12	93	0.92	169.98	167	9	1.66E-03	159.0	
4	0	92.50*	14	116	1.12	184.85	179	12	1.91E-03	186.9	
5	0	111.13*	20	66	2.24	222.07	219	8	2.81E-03	77.2	
6	0	211.28	14	68	1.80	422.07	420	8	1.94E-03	105.5	
7	0	238.03*	8	62	1.35	475.50	470	10	1.10E-03	224.8	
8	0	377.82	14	18	0.88	754.71	753	7	1.89E-03	58.2	
9	0	408.84	12	36	0.78	816.67	813	8	1.67E-03	91.3	
10	0	511.29*	31	47	2.62	1021.32	1012	21	4.25E-03	76.8	
11	0	559.13*	14	31	1.20	1116.89	1110	13	1.90E-03	94.4	
12	0	582.82*	6	5	2.11	1164.22	1161	7	8.98E-04	113.8	
13	0	586.83	20	5	1.33	1172.22	1168	10	2.78E-03	30.6	
14	0	599.78*	3	23	1.45	1198.11	1195	9	4.42E-04	304.2	
15	0	610.64	28	28	4.19	1219.81	1213	13	3.91E-03	45.2	
16	0	620.44*	12	9	1.92	1239.38	1236	7	1.73E-03	53.1	
17	0	699.30	18	18	4.86	1396.94	1392	12	2.50E-03	52.7	
18	0	826.92	13	10	1.34	1651.94	1648	10	1.83E-03	52.6	
19	0	929.90	7	2	0.55	1857.70	1855	6	9.41E-04	54.2	
20	0	999.66*	17	0	0.79	1997.13	1988	17	2.34E-03	32.0	
21	0	1119.47*	18	14	5.11	2236.57	2228	20	2.52E-03	60.4	
22	0	1177.83*	12	4	4.42	2353.22	2344	18	1.70E-03	51.5	
23	0	1251.05*	9	3	0.70	2499.56	2494	12	1.25E-03	52.2	
24	0	1327.39	7	3	0.92	2652.16	2649	6	1.03E-03	51.5	
25	0	1484.80	7	7	2.60	2966.85	2961	13	9.03E-04	89.9	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055620  *
* Acquisition date : 14-APR-2006 06:29:23 Detector SN#    : 10017452   *
* Detector ID      : GAMMA9               Sensitivity     : 3.000      *
* Geometry         : CAN                  Energy tolerance: 2.000      *
* Elapsed live time:    0 02:00:00.00     Abundance limit : 75.000     *
* Elapsed real time:    0 02:00:01.00     Half life ratio :  8.000     *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      : 25-MAR-2006 00:00:00 Nuclide Library : FERMC       *
* Sample ID        : G1201055620          Analyst initials: MJH1       *
* Batch Number     : 513807               Sample Quantity : 1.4962E+02 GRAM  *
* Recovery         :    1.00000           Carrier Weight :    0.00000  *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
* Standard Weight  :   0.00000                                          *
* CALIB. DATE/TIME :  8-JUL-2005 09:26:09 MS Isotope      : TOPLOADER   *
* MSD DPM          :    5.440             MSD Isotope     : TOPLOADER   *
* LCS DPM          :    0.000             LCS Isotope     : TOPLOADER   *
* LCSD DPM         :    0.000             LCSD Isotope    : TOPLOADER   *
*************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
Y-91	2.059E-02	3.888E-02	4.220E-02	0.000E+00
RH-106	1.600E-01	1.700E-01	2.755E-01	0.000E+00
RU-106	1.600E-01	1.700E-01	3.009E-01	0.000E+00
TE-125M	4.120E+00	6.357E+00	8.255E+00	0.000E+00
TL-208	9.066E-03	2.064E-02	1.761E-02	0.000E+00
PB-212	1.117E-02	5.021E-02	5.777E-02	0.000E+00
BI-214	7.275E-02	6.573E-02	8.394E-02	0.000E+00
TH-228	1.117E-02	5.021E-02	5.777E-02	0.000E+00
PA-234M	3.494E+00	2.238E+00	4.063E+00	0.000E+00
NP-237	5.110E-02	1.625E-01	1.855E-01	0.000E+00
ANH-511	3.223E-02	4.949E-02	2.783E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	
BE-7	1.627E-01		1.817E-01	3.809E-01	0.000E+00 NOT IDENT.
NA-22	2.609E-02		1.943E-02	4.664E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00		1.050E+08	0.000E+00	0.000E+00 SHORT HLIF
AL-26	-2.121E-02		2.225E-02	2.368E-02	0.000E+00 FAIL ABUN
K-40	4.526E-01		2.553E-01	5.947E-01	0.000E+00 NOT IDENT.
SC-46	5.927E-04		2.020E-02	3.992E-02	0.000E+00 FAIL ABUN
V-48	-1.783E-02		4.188E-02	7.652E-02	0.000E+00 NOT IDENT.
CR-51	9.744E-02		2.205E-01	4.415E-01	0.000E+00 NOT IDENT.
MN-54	1.390E-02		2.008E-02	4.219E-02	0.000E+00 NOT IDENT.
CO-56	-7.714E-03		2.086E-02	3.871E-02	0.000E+00 NOT IDENT.
MN-56	0.000E+00		2.000E+41	0.000E+00	0.000E+00 SHORT HLIF
CO-57	-6.885E-03		1.265E-02	2.252E-02	0.000E+00 NOT IDENT.
CO-58	-8.405E-03		1.799E-02	3.329E-02	0.000E+00 NOT IDENT.
FE-59	-2.506E-02		4.252E-02	7.447E-02	0.000E+00 NOT IDENT.
CO-60	-2.606E-03		1.858E-02	3.559E-02	0.000E+00 NOT IDENT.
ZN-65	3.761E-02		4.437E-02	8.985E-02	0.000E+00 NOT IDENT.

SE-75	3.219E-03	2.305E-02	4.512E-02	0.000E+00	FAIL ABUN
KR-85	7.431E+00	4.347E+00	9.365E+00	0.000E+00	NOT IDENT.
SR-85	4.022E-02	2.353E-02	5.069E-02	0.000E+00	NOT IDENT.
Y-88	1.017E-02	2.180E-02	4.907E-02	0.000E+00	NOT IDENT.
NB-94	-3.006E-03	2.131E-02	3.344E-02	0.000E+00	NOT IDENT.
NB-95	4.681E-03	2.752E-02	5.226E-02	0.000E+00	NOT IDENT.
NB-95M	1.583E+00	2.561E+00	4.510E+00	0.000E+00	NOT IDENT.
ZR-95	-1.517E-02	3.979E-02	6.950E-02	0.000E+00	NOT IDENT.
MO-99	-2.810E-02	2.274E+00	4.192E+00	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	3.298E+22	0.000E+00	0.000E+00	SHORT HLIF
RU-103	8.251E-03	2.635E-02	5.118E-02	0.000E+00	FAIL ABUN
AG-108M	7.113E-03	1.723E-02	3.438E-02	0.000E+00	NOT IDENT.
CD-109	1.508E-01	4.729E-01	6.680E-01	0.000E+00	NOT IDENT.
AG-110M	-8.211E-03	1.806E-02	3.155E-02	0.000E+00	NOT IDENT.
SN-113	-9.736E-03	2.399E-02	4.375E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	2.783E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-115	-8.414E-01	1.486E+00	2.169E+00	0.000E+00	NOT IDENT.
SN-117M	-1.330E-02	3.490E-02	6.212E-02	0.000E+00	NOT IDENT.
TE-123M	-8.494E-03	1.446E-02	2.521E-02	0.000E+00	NOT IDENT.
SB-124	7.947E-03	4.866E-02	9.360E-02	0.000E+00	NOT IDENT.
SB-125	3.210E-02	5.038E-02	1.023E-01	0.000E+00	FAIL ABUN
I-126	-5.801E-02	1.296E-01	2.256E-01	0.000E+00	NOT IDENT.
SB-126	3.761E-02	1.035E-01	2.022E-01	0.000E+00	NOT IDENT.
SN-126	1.966E-02	3.774E-02	6.744E-02	0.000E+00	FAIL ABUN
SB-127	3.245E-01	1.588E+00	3.122E+00	0.000E+00	FAIL ABUN
I-131	-1.180E-02	1.064E-01	1.996E-01	0.000E+00	NOT IDENT.
I-132	0.000E+00	2.000E+41	0.000E+00	0.000E+00	SHORT HLIF
TE-132	-8.393E-01	1.088E+00	1.809E+00	0.000E+00	NOT IDENT.
BA-133	-7.628E-03	2.374E-02	4.381E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.870E+05	0.000E+00	0.000E+00	SHORT HLIF
CS-134	4.268E-03	1.864E-02	3.668E-02	0.000E+00	NOT IDENT.
CS-135	5.315E-03	7.835E-02	1.521E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	7.546E+20	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.957E-02	6.513E-02	1.178E-01	0.000E+00	FAIL ABUN
BA-137M	6.868E-03	1.585E-02	3.233E-02	0.000E+00	NOT IDENT.
CS-137	7.195E-03	1.674E-02	3.413E-02	0.000E+00	NOT IDENT.
CE-139	-1.087E-02	1.567E-02	2.694E-02	0.000E+00	NOT IDENT.
BA-140	-7.583E-02	1.963E-01	3.503E-01	0.000E+00	NOT IDENT.
LA-140	3.847E-02	6.319E-02	1.392E-01	0.000E+00	NOT IDENT.
CE-141	8.770E-03	3.690E-02	6.918E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	8.743E+02	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-6.661E-02	1.019E-01	1.787E-01	0.000E+00	NOT IDENT.
PM-144	1.938E-03	2.497E-02	4.038E-02	0.000E+00	NOT IDENT.
PR-144	0.000E+00	2.000E+41	0.000E+00	0.000E+00	SHORT HLIF
PM-146	3.945E-03	2.094E-02	4.118E-02	0.000E+00	NOT IDENT.
ND-147	-4.690E-01	4.289E-01	6.862E-01	0.000E+00	FAIL ABUN
PM-147	-1.989E+04	2.636E+04	4.603E+04	0.000E+00	NOT IDENT.
PM-149	0.000E+00	2.483E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-2.103E-02	5.765E-02	1.057E-01	0.000E+00	NOT IDENT.
GD-153	2.330E-02	3.608E-02	7.198E-02	0.000E+00	FAIL ABUN
EU-154	7.269E-02	5.413E-02	1.299E-01	0.000E+00	NOT IDENT.
EU-155	2.375E-02	5.116E-02	1.000E-01	0.000E+00	FAIL ABUN
TB-160	3.685E-02	5.963E-02	1.330E-01	0.000E+00	FAIL ABUN
TM-171	1.504E+01	1.790E+01	2.609E+01	0.000E+00	FAIL ABUN
HF-181	-1.643E-02	2.448E-02	4.243E-02	0.000E+00	FAIL ABUN
TA-182	-9.449E-03	7.476E-02	1.440E-01	0.000E+00	FAIL ABUN
IR-192	-2.118E-02	1.807E-02	3.046E-02	0.000E+00	FAIL ABUN
HG-203	-9.234E-03	2.387E-02	4.428E-02	0.000E+00	FAIL ABUN
BI-207	-7.574E-03	2.572E-02	4.763E-02	0.000E+00	NOT IDENT.
BI-210	6.325E-01	2.482E+00	4.473E+00	0.000E+00	NOT IDENT.
PB-210	6.325E-01	2.482E+00	4.473E+00	0.000E+00	NOT IDENT.
BI-211	7.918E-02	1.185E-01	2.376E-01	0.000E+00	NOT IDENT.
PB-211	1.611E-01	5.200E-01	9.197E-01	0.000E+00	NOT IDENT.
BI-212	-7.478E-02	1.483E-01	2.543E-01	0.000E+00	NOT IDENT.
PB-214	1.531E-02	4.124E-02	8.070E-02	0.000E+00	FAIL ABUN
RN-219	3.263E-02	1.954E-01	3.836E-01	0.000E+00	NOT IDENT.
RA-223	3.379E-01	3.411E-01	7.143E-01	0.000E+00	NOT IDENT.
RA-224	1.437E-01	3.816E-01	6.410E-01	0.000E+00	NOT IDENT.
RA-226	7.275E-02	6.573E-02	8.580E-02	0.000E+00	FAIL ABUN
AC-227	-1.064E-01	1.928E-01	3.553E-01	0.000E+00	NOT IDENT.
TH-227	-1.047E-01	1.898E-01	3.496E-01	0.000E+00	FAIL ABUN
AC-228	8.431E-02	7.238E-02	1.600E-01	0.000E+00	NOT IDENT.
RA-228	8.431E-02	7.238E-02	1.600E-01	0.000E+00	NOT IDENT.
TH-229	1.526E-01	2.627E-01	5.031E-01	0.000E+00	FAIL ABUN
TH-230	7.275E-02	6.573E-02	8.580E-02	0.000E+00	FAIL ABUN
PA-231	4.430E-01	7.996E-01	1.615E+00	0.000E+00	NOT IDENT.
TH-231	-1.839E-02	9.340E-02	1.770E-01	0.000E+00	FAIL ABUN
TH-232	1.094E-02	4.921E-02	6.660E-02	0.000E+00	FAIL ABUN

PA-233	2.141E-02	3.496E-02	7.068E-02	0.000E+00	FAIL ABUN
PA-234	-1.015E-02	1.622E-01	3.115E-01	0.000E+00	FAIL ABUN
TH-234	7.798E-01	6.904E-01	1.321E+00	0.000E+00	FAIL ABUN
U-234	-2.216E-03	6.726E-02	1.290E-01	0.000E+00	FAIL ABUN
U-235	8.050E-02	1.133E-01	2.193E-01	0.000E+00	FAIL ABUN
U-238	7.798E-01	6.904E-01	1.321E+00	0.000E+00	NOT IDENT.
NP-239	-6.261E-02	9.248E-02	1.631E-01	0.000E+00	FAIL ABUN
AM-241	-1.084E-02	9.755E-02	1.329E-01	0.000E+00	NOT IDENT.
AM-242	8.537E-01	9.948E-01	2.017E+00	0.000E+00	NOT IDENT.
CM-247	-1.112E-02	1.873E-02	3.330E-02	0.000E+00	NOT IDENT.
CF-249	-8.440E-03	2.190E-02	3.995E-02	0.000E+00	NOT IDENT.
CF-251	1.120E-02	6.720E-02	1.245E-01	0.000E+00	NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 08:30:17.50

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055620.CNF;1
Sample date      : 25-MAR-2006 00:00:00 Acquisition date : 14-APR-2006 06:29:23
Sample ID        : G1201055620          Sample quantity  : 1.49620E+02 GRAM
Detector name    : GAMMA9               Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:01.00  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513807               Detector SN#     : 10017452
Matrix Spike DPM :                      LCS DPM          :
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
Y-91	557.57	14	95.08*	2.235E+00	1.619E-02	2.059E-02	188.79
	1204.90	------	0.30	1.234E+00	------	Line Not Found	------
RH-106	511.85	31	20.60	2.382E+00	1.565E-01	1.626E-01	153.54
	621.84	12	9.80*	2.072E+00	1.540E-01	1.600E-01	106.23
	1050.47	------	1.73	1.377E+00	------	Line Not Found	------
RU-106	622.20	12	9.80*	2.072E+00	1.540E-01	1.600E-01	106.23
TE-125M	109.28	20	0.28*	5.547E+00	3.232E+00	4.120E+00	154.32
TL-208	75.00	26	3.43	3.772E+00	5.125E-01	5.230E-01	132.43
	277.35	------	6.80	3.661E+00	------	Line Not Found	------
	510.84	31	21.60	2.382E+00	1.492E-01	1.523E-01	153.54
	583.14	6	84.20*	2.169E+00	8.885E-03	9.066E-03	227.67
	763.30	------	1.64	1.773E+00	------	Line Not Found	------
	860.37	------	12.46	1.615E+00	------	Line Not Found	------
	1093.90	------	0.37	1.333E+00	------	Line Not Found	------
PB-212	74.80	26	10.70	3.772E+00	1.643E-01	1.676E-01	132.43
	87.30	------	8.00	4.803E+00	------	Line Not Found	------
	115.19	------	0.60	5.577E+00	------	Line Not Found	------
	238.63	8	44.60*	4.072E+00	1.094E-02	1.117E-02	449.68
	300.09	------	3.41	3.464E+00	------	Line Not Found	------
BI-214	609.31	28	46.30*	2.096E+00	7.275E-02	7.275E-02	90.35
	768.36	------	5.04	1.764E+00	------	Line Not Found	------
	934.06	------	3.21	1.513E+00	------	Line Not Found	------
	1120.29	18	15.10	1.308E+00	2.301E-01	2.301E-01	120.83
	1238.11	------	5.94	1.208E+00	------	Line Not Found	------
	1377.67	------	4.11	1.114E+00	------	Line Not Found	------
TH-228	84.40	12	1.21	4.663E+00	5.321E-01	5.430E-01	318.02
	238.60	8	44.60*	4.072E+00	1.094E-02	1.117E-02	449.68
	300.10	------	3.41	3.464E+00	------	Line Not Found	------
PA-234M	766.40	------	0.21	1.767E+00	------	Line Not Found	------
	1001.03	17	0.85*	1.433E+00	3.494E+00	3.494E+00	64.04
NP-237	86.48	12	12.60*	4.663E+00	5.110E-02	5.110E-02	318.02
	95.87	------	2.60	5.209E+00	------	Line Not Found	------

Sample ID : G1201055620 Acquisition date : 14-APR-2006 06:29:23

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
ANH-511	511.00	31	100.00*	2.382E+00	3.223E-02	3.223E-02	153.54

Flag: "*" = Keyline

Sample ID : G1201055620 Acquisition date : 14-APR-2006 06:29:23

Total number of lines in spectrum 25
Number of unidentified lines 7
Number of lines tentatively identified by NID 18 72.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
Y-91	58.51D	1.27	1.619E-02	2.059E-02	3.888E-02	188.79	
RH-106	368.20D	1.04	1.540E-01	1.600E-01	1.700E-01	106.23	
RU-106	368.20D	1.04	1.540E-01	1.600E-01	1.700E-01	106.23	
TE-125M	58.00D	1.27	3.232E+00	4.120E+00	6.357E+00	154.32	
TL-208	1.91Y	1.02	8.885E-03	9.066E-03	20.64E-03	227.67	
PB-212	1.91Y	1.02	1.094E-02	1.117E-02	5.021E-02	449.68	
BI-214	1600.00Y	1.00	7.275E-02	7.275E-02	6.573E-02	90.35	
TH-228	1.91Y	1.02	1.094E-02	1.117E-02	5.021E-02	449.68	
PA-234M	4.47E+09Y	1.00	3.494E+00	3.494E+00	2.238E+00	64.04	
NP-237	2.14E+06Y	1.00	5.110E-02	5.110E-02	16.25E-02	318.02	
ANH-511	1.00E+09Y	1.00	3.223E-02	3.223E-02	4.949E-02	153.54	
	Total Activity :		7.237E+00	8.142E+00			

Grand Total Activity : 7.237E+00 8.142E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	66.65	28	75	1.53	133.24	120	22	3.82E-03	****	2.96E+00	T
0	92.50	14	116	1.12	184.85	179	12	1.91E-03	****	5.07E+00	T
0	211.28	14	68	1.80	422.07	420	8	1.94E-03	****	4.41E+00	T
0	377.82	14	18	0.88	754.71	753	7	1.89E-03	****	2.95E+00	
0	408.84	12	36	0.78	816.67	813	8	1.67E-03	****	2.79E+00	
0	586.83	20	5	1.33	1172.22	1168	10	2.78E-03	61.2	2.16E+00	
0	599.78	3	23	1.45	1198.11	1195	9	4.42E-04	****	2.12E+00	T
0	699.30	18	18	4.86	1396.94	1392	12	2.50E-03	****	1.90E+00	T
0	826.92	13	10	1.34	1651.94	1648	10	1.83E-03	****	1.67E+00	T
0	929.90	7	2	0.55	1857.70	1855	6	9.41E-04	****	1.52E+00	
0	1177.83	12	4	4.42	2353.22	2344	18	1.70E-03	****	1.26E+00	T
0	1251.05	9	3	0.70	2499.56	2494	12	1.25E-03	****	1.20E+00	
0	1327.39	7	3	0.92	2652.16	2649	6	1.03E-03	****	1.15E+00	
0	1484.80	7	7	2.60	2966.85	2961	13	9.03E-04	****	1.06E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 08:30:20.83

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*****************************************************************************
*                          GENERAL ENG. LABS, LLC.                          *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                               DETECTOR DATA                               *
*                                                                           *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055620.CNF;1    *
* Acquisition date : 14-APR-2006 06:29:23  Detector SN#    : 10017452        *
* Detector ID      : GAMMA9                Sensitivity     : 3.00000         *
* Geometry         : CAN                   Energy tolerance: 2.00000         *
* Elapsed live time: 0 02:00:00.00         Abundance limit : 75.00000        *
* Elapsed real time: 0 02:00:01.00         Half life ratio : 8.00000         *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date      : 25-MAR-2006 00:00:00  Nuclide Library : EPI             *
* Sample ID        : G1201055620           Analyst initials: MJH1            *
* Batch Number     : 513807                Sample Quantity : 1.49620E+02 GRAM  *
*****************************************************************************
*                                                                           *
*                                 QC DATA                                   *
*                                                                           *
* CALIB. DATE/TIME : 8-JUL-2005 09:26:09.34MS Isotope      : TOPLOADER      *
* MSD DPM          :                       MSD Isotope     :                *
* LCS DPM          :                       LCS Isotope     :                *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
Y-91	2.059E-02	3.888E-02	4.092E-02	0.000E+00	0.503
RH-106	1.600E-01	1.700E-01	2.678E-01	0.000E+00	0.597
RU-106	1.600E-01	1.700E-01	2.926E-01	0.000E+00	0.547
TE-125M	4.120E+00	6.357E+00	7.703E+00	0.000E+00	0.535
TL-208	9.066E-03	2.064E-02	1.709E-02	0.000E+00	0.530
PB-212	1.117E-02	5.021E-02	5.489E-02	0.000E+00	0.203
BI-214	7.275E-02	6.573E-02	8.157E-02	0.000E+00	0.892
TH-228	1.117E-02	5.021E-02	5.489E-02	0.000E+00	0.203
PA-234M	3.494E+00	2.238E+00	3.997E+00	0.000E+00	0.874
NP-237	5.110E-02	1.625E-01	1.721E-01	0.000E+00	0.297
ANH-511	3.223E-02	4.949E-02	2.692E-02	0.000E+00	1.197

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.627E-01		1.817E-01	3.679E-01	0.000E+00	0.442

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	2.609E-02		1.943E-02	4.616E-02	0.000E+00	0.565
AL-26	-2.121E-02		2.225E-02	2.365E-02	0.000E+00	-0.897
K-40	4.526E-01		2.553E-01	5.907E-01	0.000E+00	0.766
SC-46	5.927E-04		2.020E-02	3.916E-02	0.000E+00	0.015
V-48	-1.783E-02		4.188E-02	7.524E-02	0.000E+00	-0.237
CR-51	9.744E-02		2.205E-01	4.223E-01	0.000E+00	0.231
MN-54	1.390E-02		2.008E-02	4.132E-02	0.000E+00	0.336
CO-56	-7.714E-03		2.086E-02	3.792E-02	0.000E+00	-0.203
CO-57	-6.885E-03		1.265E-02	2.107E-02	0.000E+00	-0.327
CO-58	-8.405E-03		1.799E-02	3.258E-02	0.000E+00	-0.258
FE-59	-2.506E-02		4.252E-02	7.344E-02	0.000E+00	-0.341
CO-60	-2.606E-03		1.858E-02	3.527E-02	0.000E+00	-0.074
ZN-65	3.761E-02		4.437E-02	8.864E-02	0.000E+00	0.424
SE-75	3.219E-03		2.305E-02	4.297E-02	0.000E+00	0.075
KR-85	7.431E+00		4.347E+00	9.063E+00	0.000E+00	0.820
SR-85	4.022E-02		2.353E-02	4.905E-02	0.000E+00	0.820
Y-88	1.017E-02		2.180E-02	4.903E-02	0.000E+00	0.207
NB-94	-3.006E-03		2.131E-02	3.261E-02	0.000E+00	-0.092
NB-95	4.681E-03		2.752E-02	5.107E-02	0.000E+00	0.092
NB-95M	1.583E+00		2.561E+00	4.283E+00	0.000E+00	0.370
ZR-95	-1.517E-02		3.979E-02	6.790E-02	0.000E+00	-0.223
MO-99	-2.810E-02		2.274E+00	3.935E+00	0.000E+00	-0.007
RU-103	8.251E-03		2.635E-02	4.948E-02	0.000E+00	0.167
AG-108M	7.113E-03		1.723E-02	3.313E-02	0.000E+00	0.215
CD-109	1.508E-01		4.729E-01	6.203E-01	0.000E+00	0.243
AG-110M	-8.211E-03		1.806E-02	3.072E-02	0.000E+00	-0.267
SN-113	-9.736E-03		2.399E-02	4.206E-02	0.000E+00	-0.232
SN-115	-8.414E-01		1.486E+00	2.130E+00	0.000E+00	-0.395
SN-117M	-1.330E-02		3.490E-02	5.846E-02	0.000E+00	-0.228
TE-123M	-8.494E-03		1.446E-02	2.373E-02	0.000E+00	-0.358
SB-124	7.947E-03		4.866E-02	9.333E-02	0.000E+00	0.085
SB-125	3.210E-02		5.038E-02	9.851E-02	0.000E+00	0.326
I-126	-5.801E-02		1.296E-01	2.197E-01	0.000E+00	-0.264
SB-126	3.761E-02		1.035E-01	1.973E-01	0.000E+00	0.191
SN-126	1.966E-02		3.774E-02	6.261E-02	0.000E+00	0.314
SB-127	3.245E-01		1.588E+00	3.043E+00	0.000E+00	0.107
I-131	-1.180E-02		1.064E-01	1.916E-01	0.000E+00	-0.062
TE-132	-8.393E-01		1.088E+00	1.716E+00	0.000E+00	-0.489
BA-133	-7.628E-03		2.374E-02	4.202E-02	0.000E+00	-0.182
CS-134	4.268E-03		1.864E-02	3.588E-02	0.000E+00	0.119
CS-135	5.315E-03		7.835E-02	1.450E-01	0.000E+00	0.037
CS-136	-2.957E-02		6.513E-02	1.160E-01	0.000E+00	-0.255
BA-137M	6.868E-03		1.585E-02	3.148E-02	0.000E+00	0.218
CS-137	7.195E-03		1.674E-02	3.324E-02	0.000E+00	0.216
CE-139	-1.087E-02		1.567E-02	2.538E-02	0.000E+00	-0.428
BA-140	-7.583E-02		1.963E-01	3.394E-01	0.000E+00	-0.223
LA-140	3.847E-02		6.319E-02	1.385E-01	0.000E+00	0.278
CE-141	8.770E-03		3.690E-02	6.498E-02	0.000E+00	0.135

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CE-144	-6.661E-02		1.019E-01	1.675E-01	0.000E+00	-0.398
PM-144	1.938E-03		2.497E-02	3.936E-02	0.000E+00	0.049
PM-146	3.945E-03		2.094E-02	3.973E-02	0.000E+00	0.099
ND-147	-4.690E-01		4.289E-01	6.646E-01	0.000E+00	-0.706
PM-147	-1.989E+04		2.636E+04	4.306E+04	0.000E+00	-0.462
EU-152	-2.103E-02		5.765E-02	1.013E-01	0.000E+00	-0.208
GD-153	2.330E-02		3.608E-02	6.699E-02	0.000E+00	0.348
EU-154	7.269E-02		5.413E-02	1.286E-01	0.000E+00	0.565
EU-155	2.375E-02		5.116E-02	9.326E-02	0.000E+00	0.255
TB-160	3.685E-02		5.963E-02	1.305E-01	0.000E+00	0.282
TM-171	1.504E+01	+	1.790E+01	2.408E+01	0.000E+00	0.625
HF-181	-1.643E-02		2.448E-02	4.099E-02	0.000E+00	-0.401
TA-182	-9.449E-03		7.476E-02	1.424E-01	0.000E+00	-0.066
IR-192	-2.118E-02		1.807E-02	2.913E-02	0.000E+00	-0.727
HG-203	-9.234E-03		2.387E-02	4.222E-02	0.000E+00	-0.219
BI-207	-7.574E-03		2.572E-02	4.693E-02	0.000E+00	-0.161
BI-210	6.325E-01		2.482E+00	4.096E+00	0.000E+00	0.154
PB-210	6.325E-01		2.482E+00	4.096E+00	0.000E+00	0.154
BI-211	7.918E-02		1.185E-01	2.278E-01	0.000E+00	0.348
PB-211	1.611E-01		5.200E-01	8.849E-01	0.000E+00	0.182
BI-212	-7.478E-02		1.483E-01	2.482E-01	0.000E+00	-0.301
PB-214	1.531E-02		4.124E-02	7.738E-02	0.000E+00	0.198
RN-219	3.263E-02		1.954E-01	3.690E-01	0.000E+00	0.088
RA-223	3.379E-01		3.411E-01	6.836E-01	0.000E+00	0.494
RA-224	1.437E-01		3.816E-01	6.091E-01	0.000E+00	0.236
RA-226	7.275E-02	+	6.573E-02	8.337E-02	0.000E+00	0.873
AC-227	-1.064E-01		1.928E-01	3.381E-01	0.000E+00	-0.315
TH-227	-1.047E-01		1.898E-01	3.327E-01	0.000E+00	-0.315
AC-228	8.431E-02		7.238E-02	1.570E-01	0.000E+00	0.537
RA-228	8.431E-02		7.238E-02	1.570E-01	0.000E+00	0.537
TH-229	1.526E-01		2.627E-01	4.757E-01	0.000E+00	0.321
TH-230	7.275E-02	+	6.573E-02	8.337E-02	0.000E+00	0.873
PA-231	4.430E-01		7.996E-01	1.540E+00	0.000E+00	0.288
TH-231	-1.839E-02		9.340E-02	1.687E-01	0.000E+00	-0.109
TH-232	1.094E-02	+	4.921E-02	6.327E-02	0.000E+00	0.173
PA-233	2.141E-02		3.496E-02	6.758E-02	0.000E+00	0.317
PA-234	-1.015E-02		1.622E-01	3.061E-01	0.000E+00	-0.033
TH-234	7.798E-01		6.904E-01	1.218E+00	0.000E+00	0.640
U-234	-2.216E-03		6.726E-02	1.232E-01	0.000E+00	-0.018
U-235	8.050E-02		1.133E-01	2.059E-01	0.000E+00	0.391
U-238	7.798E-01		6.904E-01	1.218E+00	0.000E+00	0.640
NP-239	-6.261E-02		9.248E-02	1.525E-01	0.000E+00	-0.411
AM-241	-1.084E-02		9.755E-02	1.223E-01	0.000E+00	-0.089
AM-242	8.537E-01		9.948E-01	1.880E+00	0.000E+00	0.454
CM-247	-1.112E-02		1.873E-02	3.204E-02	0.000E+00	-0.347
CF-249	-8.440E-03		2.190E-02	3.840E-02	0.000E+00	-0.220
CF-251	1.120E-02		6.720E-02	1.174E-01	0.000E+00	0.095

```
*****************************************************************************
*                                                                           *
*                          General Engineering Labs, LLC                    *
*                                2040 SAVAGE ROAD                           *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID     : 513807                    SAMPLE ID  : G1201055620       *
*   ANALYST      : MJH1                      DETECTOR   : GAMMA9            *
*   SAMPLE DATE  : 25-MAR-2006 00:00:00.00   COUNT TIME :    0 02:00:00.00   *
*   ANALYSIS DATE: 14-APR-2006 06:29:23.10   SAMPLE ALQT:  149.620 GRAM      *
*                                                                           *
*****************************************************************************
```

GROSS GAMMA ACTIVITY (pCi/GRAM)	: 4.234E-01
GROSS GAMMA ERROR (pCi/GRAM)	: 3.768E-01
GROSS GAMMA MDA (pCi/GRAM)	: 1.244E+00
GROSS GAMMA DLC (pCi/GRAM)	: 5.808E-01

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 10:48:33.35

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055621.CNF;1
Sample date      : 11-MAR-2006 12:05:00 Acquisition date : 14-APR-2006 08:48:09
Sample ID        : G1201055621          Sample quantity  : 1.20050E+02 GRAM
Detector name    : GAMMA16              Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:00.97  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513807               Detector SN#     : 1922864
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.14*	45	317	1.11	124.81	121	10	6.22E-03	77.4	
2	3	74.71*	163	298	1.13	147.93	145	19	2.27E-02	19.5	8.59E-01
3	3	77.03*	363	235	0.99	152.58	145	19	5.04E-02	8.7	
4	1	84.15*	51	230	1.17	166.79	163	18	7.02E-03	54.8	1.78E+00
5	1	87.15*	152	248	1.17	172.79	163	18	2.12E-02	19.1	
6	1	89.86	73	191	1.18	178.21	163	18	1.02E-02	29.4	
7	0	92.84*	160	327	1.38	184.17	181	11	2.23E-02	24.7	
8	0	128.27	36	308	1.39	254.96	252	10	4.96E-03	93.2	
9	0	143.00*	45	312	1.33	284.40	278	11	6.21E-03	79.5	
10	0	185.82*	112	295	1.57	369.98	365	12	1.56E-02	33.1	
11	0	209.25	95	185	0.82	416.82	414	8	1.31E-02	27.1	
12	4	238.46*	944	128	1.06	475.18	472	27	1.31E-01	3.8	9.65E-01
13	4	241.39*	228	171	1.83	481.04	472	27	3.17E-02	16.1	
14	0	259.25	17	394	8.46	516.74	506	21	2.34E-03	298.3	
15	0	270.61	90	209	3.51	539.44	534	13	1.26E-02	34.5	
16	0	277.03	54	116	1.49	552.28	549	8	7.50E-03	37.1	
17	0	295.01*	263	182	1.23	588.21	581	13	3.66E-02	12.4	
18	0	299.47	62	138	0.94	597.14	594	9	8.63E-03	36.1	
19	0	327.90	82	99	0.88	653.96	650	9	1.14E-02	24.5	
20	0	337.91*	177	133	1.26	673.97	669	11	2.45E-02	15.1	
21	0	351.69*	407	136	1.19	701.52	696	11	5.65E-02	7.6	
22	0	441.82	58	108	7.72	881.71	873	18	8.06E-03	44.0	
23	0	462.28	29	123	0.88	922.61	920	11	4.08E-03	75.0	
24	0	510.45*	87	128	2.11	1018.90	1011	16	1.20E-02	35.8	
25	0	573.11	14	28	1.37	1144.18	1142	6	1.93E-03	65.2	
26	0	582.83*	302	67	1.45	1163.63	1159	12	4.19E-02	8.1	
27	0	608.91*	308	72	1.48	1215.77	1210	13	4.27E-02	8.2	
28	0	726.38	86	28	1.56	1450.67	1444	11	1.19E-02	16.0	
29	0	769.08	68	57	5.81	1536.08	1530	15	9.39E-03	27.7	
30	0	785.67	29	19	1.60	1569.25	1566	8	4.00E-03	32.6	
31	0	794.49*	33	38	1.11	1586.88	1582	10	4.62E-03	39.4	
32	0	843.51*	28	15	2.72	1684.92	1681	9	3.87E-03	33.2	
33	0	859.59*	27	20	1.53	1717.08	1715	6	3.76E-03	37.6	
34	0	910.69*	207	39	1.72	1819.30	1814	14	2.88E-02	9.9	
35	2	964.18*	35	47	2.04	1926.29	1918	23	4.81E-03	43.2	3.13E+00
36	2	968.31*	134	40	1.82	1934.56	1918	23	1.85E-02	13.1	
37	0	975.74	16	22	0.65	1949.41	1943	10	2.17E-03	62.0	
38	0	1038.05*	31	122	15.36	2074.06	2040	44	4.30E-03	124.6	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1109.56	16	9	1.19	2217.13	2211	9	2.22E-03	42.0	
40	0	1119.70*	15	40	1.53	2237.43	2237	5	2.08E-03	82.9	
41	0	1161.38	10	15	0.63	2320.81	2318	7	1.33E-03	75.7	
42	0	1236.43	22	39	1.30	2470.98	2464	12	3.11E-03	59.6	
43	0	1459.55*	696	35	1.95	2917.50	2908	17	9.66E-02	4.3	
44	0	1507.35*	7	12	1.22	3013.16	3009	12	9.04E-04	116.9	
45	3	1587.31	15	8	2.87	3173.21	3168	20	2.13E-03	40.3	1.44E+00
46	3	1591.43*	33	3	2.61	3181.46	3168	20	4.56E-03	21.7	
47	5	1720.67	16	1	3.56	3440.19	3435	47	2.19E-03	28.8	4.25E-01
48	5	1728.70	21	5	3.57	3456.27	3435	47	2.90E-03	37.6	
49	0	1763.26*	64	17	1.54	3525.46	3519	15	8.89E-03	19.8	
50	0	1837.96*	3	2	1.02	3675.04	3672	7	4.17E-04	154.5	
51	0	1847.80	18	10	7.60	3694.74	3687	18	2.52E-03	51.9	
52	0	1878.21*	11	2	1.06	3755.63	3751	10	1.54E-03	42.1	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          General Eng. Labs, LLC.                          *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                               DETECTOR DATA                               *
*                                                                           *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055621      *
* Acquisition date : 14-APR-2006 08:48:09 Detector SN#    : 1922864        *
* Detector ID      : GAMMA16              Sensitivity     : 3.000          *
* Geometry         : CAN                  Energy tolerance: 2.000          *
* Elapsed live time:    0 02:00:00.00     Abundance limit : 75.000         *
* Elapsed real time:    0 02:00:00.97     Half life ratio :  8.000         *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date      : 11-MAR-2006 12:05:00 Nuclide Library :                 *
* Sample ID        : G1201055621          Analyst initials: MJH1            *
* Batch Number     : 513807               Sample Quantity : 1.2005E+02 GRAM *
* Recovery         :    1.00000           Carrier Weight :    0.00000       *
*****************************************************************************
*                                                                           *
*                                 QC DATA                                   *
* Standard Weight  :   0.00000                                              *
* CALIB. DATE/TIME :  5-APR-2006 19:34:04 MS Isotope      :                 *
* MSD DPM          :    0.000             MSD Isotope     :                 *
* LCS DPM          :    0.000             LCS Isotope     :                 *
* LCSD DPM         :    0.000             LCSD Isotope    :                 *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	1.865E+01	2.021E+00	5.925E-01	0.000E+00
CD-109	2.852E+00	1.129E+00	1.467E+00	0.000E+00
SN-126	2.777E-01	1.099E-01	1.441E-01	0.000E+00
TL-208	4.754E-01	8.374E-02	6.286E-02	0.000E+00
BI-211	2.821E+00	4.761E-01	3.406E-01	0.000E+00
BI-212	1.153E+00	3.832E-01	4.206E-01	0.000E+00
PB-212	1.507E+00	1.830E-01	9.979E-02	0.000E+00
BI-214	8.817E-01	1.610E-01	1.132E-01	0.000E+00
PB-214	9.813E-01	1.734E-01	1.158E-01	0.000E+00
RA-224	4.145E+00	1.375E+00	1.077E+00	0.000E+00
RA-226	8.817E-01	1.610E-01	1.132E-01	0.000E+00
AC-228	1.420E+00	3.281E-01	2.011E-01	0.000E+00
RA-228	1.420E+00	3.281E-01	2.011E-01	0.000E+00
TH-228	1.507E+00	1.830E-01	9.978E-02	0.000E+00
TH-230	8.817E-01	1.610E-01	1.132E-01	0.000E+00
TH-232	1.457E+00	1.770E-01	9.647E-02	0.000E+00
TH-234	2.057E+00	3.210E+00	3.030E+00	0.000E+00
U-234	1.092E+00	2.912E-01	2.137E-01	0.000E+00
U-235	2.222E-01	3.554E-01	3.307E-01	0.000E+00
NP-237	8.154E-01	3.640E-01	4.317E-01	0.000E+00
U-238	2.057E+00	3.210E+00	3.030E+00	0.000E+00
ANH-511	1.007E-01	7.235E-02	4.987E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error Ided	MDA (pCi/GRAM)		
BE-7	1.821E-02	3.915E-01	7.076E-01	0.000E+00	NOT IDENT.
NA-22	6.004E-03	3.734E-02	6.980E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	6.655E+14	0.000E+00	0.000E+00	SHORT HLIF
AL-26	2.979E-02	2.622E-02	6.239E-02	0.000E+00	FAIL ABUN
SC-46	-1.622E-02	4.190E-02	7.022E-02	0.000E+00	FAIL ABUN

V-48	-6.576E-02	1.422E-01	2.495E-01	0.000E+00	NOT IDENT.
CR-51	1.171E-02	5.670E-01	9.717E-01	0.000E+00	NOT IDENT.
MN-54	3.519E-02	3.960E-02	7.437E-02	0.000E+00	NOT IDENT.
CO-56	-3.283E-02	4.827E-02	6.551E-02	0.000E+00	FAIL ABUN
MN-56	0.000E+00	1.468E+41	0.000E+00	0.000E+00	SHORT HLIF
CO-57	1.183E-02	2.469E-02	4.516E-02	0.000E+00	NOT IDENT.
CO-58	-2.973E-02	4.265E-02	6.913E-02	0.000E+00	NOT IDENT.
FE-59	2.988E-02	1.153E-01	2.154E-01	0.000E+00	NOT IDENT.
CO-60	-6.448E-03	3.523E-02	6.324E-02	0.000E+00	NOT IDENT.
ZN-65	-2.748E-01	1.169E-01	1.623E-01	0.000E+00	NOT IDENT.
SE-75	-3.492E-03	5.177E-02	7.909E-02	0.000E+00	NOT IDENT.
KR-85	4.558E+00	7.823E+00	1.296E+01	0.000E+00	NOT IDENT.
SR-85	2.846E-02	4.885E-02	8.091E-02	0.000E+00	NOT IDENT.
Y-88	1.214E-02	3.750E-02	6.881E-02	0.000E+00	FAIL ABUN
Y-91	6.455E-03	4.242E-02	7.697E-02	0.000E+00	NOT IDENT.
NB-94	4.654E-03	3.102E-02	5.554E-02	0.000E+00	NOT IDENT.
NB-95	6.842E-02	8.128E-02	1.358E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	7.572E+01	0.000E+00	0.000E+00	SHORT HLIF
ZR-95	-5.115E-02	8.329E-02	1.373E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.324E+02	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.405E+39	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.725E-02	4.590E-02	8.896E-02	0.000E+00	FAIL ABUN
RH-106	1.217E-01	2.937E-01	5.449E-01	0.000E+00	FAIL ABUN
RU-106	1.429E-01	2.963E-01	5.519E-01	0.000E+00	NOT IDENT.
AG-108M	1.377E-02	2.894E-02	5.445E-02	0.000E+00	NOT IDENT.
AG-110M	-4.558E-02	3.458E-02	5.323E-02	0.000E+00	NOT IDENT.
SN-113	-6.767E-02	4.209E-02	6.692E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	3.537E+03	0.000E+00	0.000E+00	SHORT HLIF
SN-115	5.191E+00	4.408E+00	8.900E+00	0.000E+00	NOT IDENT.
SN-117M	5.349E-02	1.299E-01	2.341E-01	0.000E+00	NOT IDENT.
TE-123M	1.334E-03	2.889E-02	5.113E-02	0.000E+00	NOT IDENT.
SB-124	-6.279E-02	7.103E-02	1.041E-01	0.000E+00	NOT IDENT.
SB-125	-3.445E-02	8.151E-02	1.435E-01	0.000E+00	FAIL ABUN
TE-125M	-8.494E-01	1.008E+01	1.811E+01	0.000E+00	NOT IDENT.
I-126	2.273E-01	4.564E-01	8.449E-01	0.000E+00	NOT IDENT.
SB-126	1.240E-01	3.597E-01	6.600E-01	0.000E+00	NOT IDENT.
SB-127	0.000E+00	3.331E+01	0.000E+00	0.000E+00	SHORT HLIF
I-131	-4.001E-01	5.315E-01	9.204E-01	0.000E+00	NOT IDENT.
I-132	0.000E+00	6.882E+41	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	3.345E+01	0.000E+00	0.000E+00	SHORT HLIF
BA-133	-8.957E-02	4.282E-02	6.479E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.846E+10	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.660E-02	5.274E-02	8.277E-02	0.000E+00	FAIL ABUN
CS-135	1.838E-01	1.614E-01	2.706E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.748E+36	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.272E-01	2.729E-01	4.539E-01	0.000E+00	FAIL ABUN
BA-137M	3.145E-02	3.530E-02	6.683E-02	0.000E+00	NOT IDENT.
CS-137	3.325E-02	3.732E-02	7.064E-02	0.000E+00	NOT IDENT.
CE-139	-9.122E-03	2.904E-02	5.034E-02	0.000E+00	NOT IDENT.
BA-140	4.465E-02	6.445E-01	1.166E+00	0.000E+00	NOT IDENT.
LA-140	9.288E-02	2.180E-01	3.957E-01	0.000E+00	FAIL ABUN
CE-141	9.313E-03	9.277E-02	1.484E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.056E+06	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-4.723E-02	1.889E-01	3.323E-01	0.000E+00	NOT IDENT.
PM-144	-4.420E-03	3.494E-02	6.080E-02	0.000E+00	NOT IDENT.
PR-144	0.000E+00	7.905E+41	0.000E+00	0.000E+00	SHORT HLIF
PM-146	-1.919E-02	3.672E-02	6.389E-02	0.000E+00	NOT IDENT.
ND-147	3.422E-01	1.736E+00	3.164E+00	0.000E+00	FAIL ABUN
PM-147	7.608E+03	4.987E+04	8.989E+04	0.000E+00	NOT IDENT.
PM-149	0.000E+00	3.254E+04	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-8.445E-02	9.638E-02	1.522E-01	0.000E+00	FAIL ABUN
GD-153	-5.985E-02	8.439E-02	1.308E-01	0.000E+00	FAIL ABUN
EU-154	1.690E-02	1.034E-01	1.932E-01	0.000E+00	NOT IDENT.
EU-155	1.658E-02	9.582E-02	1.745E-01	0.000E+00	FAIL ABUN
TB-160	-1.163E-01	1.452E-01	2.292E-01	0.000E+00	FAIL ABUN
TM-171	-1.438E+01	3.772E+01	6.114E+01	0.000E+00	NOT IDENT.
HF-181	-1.120E-02	5.601E-02	9.926E-02	0.000E+00	NOT IDENT.
TA-182	-3.271E-02	1.842E-01	3.272E-01	0.000E+00	FAIL ABUN
IR-192	-6.235E-03	3.964E-02	6.703E-02	0.000E+00	FAIL ABUN
HG-203	9.472E-03	5.618E-02	8.733E-02	0.000E+00	FAIL ABUN
BI-207	1.242E-02	4.820E-02	9.062E-02	0.000E+00	NOT IDENT.
BI-210	2.449E+00	1.258E+01	1.996E+01	0.000E+00	NOT IDENT.
PB-210	2.449E+00	1.258E+01	1.996E+01	0.000E+00	NOT IDENT.
PB-211	7.243E-02	8.924E-01	1.623E+00	0.000E+00	NOT IDENT.
RN-219	2.107E-03	3.722E-01	6.771E-01	0.000E+00	FAIL ABUN
RA-223	2.111E-01	6.020E-01	1.057E+00	0.000E+00	FAIL ABUN
AC-227	1.297E-01	3.947E-01	6.921E-01	0.000E+00	FAIL ABUN
TH-227	1.274E-01	3.881E-01	6.802E-01	0.000E+00	FAIL ABUN

TH-229	1.951E-01	4.819E-01	8.586E-01	0.000E+00 FAIL ABUN
PA-231	-6.880E-01	1.537E+00	2.550E+00	0.000E+00 FAIL ABUN
TH-231	0.000E+00	3.477E-01	3.569E-01	0.000E+00 FAIL ABUN
PA-233	2.283E-02	6.237E-02	1.095E-01	0.000E+00 FAIL ABUN
PA-234	-2.448E-02	2.468E-01	4.549E-01	0.000E+00 FAIL ABUN
PA-234M	2.067E+00	4.205E+00	8.067E+00	0.000E+00 NOT IDENT.
NP-239	-1.843E-01	1.727E-01	2.925E-01	0.000E+00 FAIL ABUN
AM-241	-7.797E-02	2.386E-01	3.915E-01	0.000E+00 NOT IDENT.
AM-242	2.947E-01	1.991E+00	3.621E+00	0.000E+00 NOT IDENT.
CM-247	-2.626E-03	3.409E-02	6.158E-02	0.000E+00 FAIL ABUN
CF-249	4.070E-02	3.532E-02	6.924E-02	0.000E+00 NOT IDENT.
CF-251	1.328E-01	1.147E-01	2.129E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 10:48:35.27

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055621.CNF;1
Sample date      : 11-MAR-2006 12:05:00 Acquisition date : 14-APR-2006 08:48:09
Sample ID        : G1201055621          Sample quantity  : 1.20050E+02 GRAM
Detector name    : GAMMA16              Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:00:00.97  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513807               Detector SN#     : 1922864
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	696	10.67*	1.093E+00	1.865E+01	1.865E+01	10.83
CD-109	88.03	152	3.79*	4.639E+00	2.711E+00	2.852E+00	39.58
SN-126	64.28	45	9.60	1.793E+00	8.143E-01	8.143E-01	155.74
	86.94	152	8.90	4.639E+00	1.154E+00	1.154E+00	56.59
	87.57	152	37.00*	4.639E+00	2.777E-01	2.777E-01	39.58
TL-208	75.00	163	3.43	3.298E+00	4.517E+00	4.672E+00	41.27
	277.35	54	6.80	4.100E+00	6.056E-01	6.264E-01	75.21
	510.84	87	21.60	2.691E+00	4.663E-01	4.823E-01	72.32
	583.14	302	84.20*	2.437E+00	4.597E-01	4.754E-01	17.61
	763.30	------	1.64	1.954E+00	------ Line Not Found		------
	860.37	27	12.46	1.757E+00	3.863E-01	3.996E-01	75.78
	1093.90	------	0.37	1.403E+00	------ Line Not Found		------
BI-211	351.07	407	12.94*	3.485E+00	2.821E+00	2.821E+00	16.88
BI-212	727.18	86	11.80*	2.040E+00	1.115E+00	1.153E+00	33.22
PB-212	74.80	163	10.70	3.298E+00	1.448E+00	1.498E+00	41.40
	87.30	152	8.00	4.639E+00	1.284E+00	1.328E+00	40.83
	115.19	------	0.60	5.993E+00	------ Line Not Found		------
	238.63	944	44.60*	4.541E+00	1.457E+00	1.507E+00	12.15
	300.09	62	3.41	3.887E+00	1.465E+00	1.516E+00	72.91
BI-214	609.31	308	46.30*	2.356E+00	8.817E-01	8.817E-01	18.26
	768.36	68	5.04	1.941E+00	2.160E+00	2.160E+00	56.17
	934.06	------	3.21	1.627E+00	------ Line Not Found		------
	1120.29	15	15.10	1.372E+00	2.261E-01	2.261E-01	166.17
	1238.11	22	5.94	1.253E+00	9.406E-01	9.407E-01	119.48
	1377.67	------	4.11	1.143E+00	------ Line Not Found		------
PB-214	74.81	163	6.21	3.298E+00	2.495E+00	2.495E+00	41.01
	77.11	363	10.50	3.582E+00	3.018E+00	3.018E+00	21.72
	87.30	152	4.41	4.639E+00	2.330E+00	2.330E+00	40.42
	241.98	228	7.50	4.504E+00	2.111E+00	2.111E+00	33.64
	295.21	263	19.20	3.928E+00	1.092E+00	1.092E+00	26.67
	351.92	407	37.20*	3.485E+00	9.812E-01	9.813E-01	17.67
RA-226	295.21	263	19.20	3.928E+00	1.092E+00	1.092E+00	26.67

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	351.92	407	37.20	3.485E+00	9.812E-01	9.813E-01	16.66
	609.31	308	46.30*	2.356E+00	8.817E-01	8.817E-01	18.26
AC-228	209.25	95	4.40	4.952E+00	1.358E+00	1.374E+00	84.06
	338.32	177	11.40	3.581E+00	1.352E+00	1.367E+00	50.95
	463.01	29	4.40	2.888E+00	7.227E-01	7.308E-01	151.77
	794.95	33	4.60	1.886E+00	1.198E+00	1.212E+00	82.11
	911.21	207	27.70*	1.666E+00	1.404E+00	1.420E+00	23.11
	964.77	35	5.20	1.580E+00	1.318E+00	1.333E+00	89.80
	969.11	134	16.60	1.573E+00	1.599E+00	1.617E+00	35.11
RA-228	209.25	95	4.40	4.952E+00	1.358E+00	1.374E+00	84.06
	338.32	177	11.40	3.581E+00	1.352E+00	1.367E+00	50.95
	463.01	29	4.40	2.888E+00	7.227E-01	7.308E-01	151.77
	794.95	33	4.60	1.886E+00	1.198E+00	1.212E+00	82.11
	911.21	207	27.70*	1.666E+00	1.404E+00	1.420E+00	23.11
	964.77	35	5.20	1.580E+00	1.318E+00	1.333E+00	89.80
	969.11	134	16.60	1.573E+00	1.599E+00	1.617E+00	35.11
TH-228	84.40	51	1.21	4.358E+00	2.997E+00	3.100E+00	110.45
	238.60	944	44.60*	4.541E+00	1.457E+00	1.507E+00	12.15
	300.10	62	3.41	3.887E+00	1.465E+00	1.516E+00	93.39
TH-230	295.21	263	19.20	3.928E+00	1.092E+00	1.092E+00	26.67
	351.92	407	37.20	3.485E+00	9.812E-01	9.812E-01	16.66
	609.31	308	46.30*	2.356E+00	8.817E-01	8.817E-01	18.26
TH-232	238.59	944	44.60*	4.541E+00	1.457E+00	1.457E+00	12.15
	911.20	207	27.70	1.666E+00	1.404E+00	1.404E+00	23.11
	964.40	35	5.20	1.580E+00	1.318E+00	1.318E+00	89.80
	969.11	134	16.60	1.573E+00	1.599E+00	1.599E+00	35.11
TH-234	63.29	45	3.80*	1.793E+00	2.057E+00	2.057E+00	156.04
	92.38	160	5.41	5.091E+00	1.821E+00	1.821E+00	52.75
	112.81	------	0.24	5.950E+00	------ Line Not Found		------
U-234	67.67	------	0.37	2.385E+00	------ Line Not Found		------
	241.98	228	7.49	4.504E+00	2.114E+00	2.114E+00	33.64
	295.21	263	19.20*	3.928E+00	1.092E+00	1.092E+00	26.67
	351.92	407	37.20	3.485E+00	9.812E-01	9.812E-01	17.67
U-235	89.95	73	2.70	4.868E+00	1.748E+00	1.748E+00	66.55
	93.35	160	4.50	5.091E+00	2.189E+00	2.189E+00	56.93
	105.00	------	2.10	5.731E+00	------ Line Not Found		------
	143.76	45	10.50*	5.989E+00	2.222E-01	2.222E-01	159.94
	163.33	------	4.70	5.703E+00	------ Line Not Found		------
	185.71	112	54.00	5.328E+00	1.219E-01	1.219E-01	66.79
	205.31	------	5.00	5.012E+00	------ Line Not Found		------
NP-237	86.48	152	12.60*	4.639E+00	8.154E-01	8.154E-01	44.64
	95.87	------	2.60	5.290E+00	------ Line Not Found		------
U-238	63.29	45	3.80*	1.793E+00	2.057E+00	2.057E+00	156.04
ANH-511	511.00	87	100.00*	2.691E+00	1.007E-01	1.007E-01	71.83

Nuclide Type: NATURAL

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-224	240.98	228	3.95*	4.504E+00	4.008E+00	4.145E+00	33.17

Flag: "*" = Keyline

Sample ID : G1201055621 Acquisition date : 14-APR-2006 08:48:09

Total number of lines in spectrum	52	
Number of unidentified lines	14	
Number of lines tentatively identified by NID	38	73.08%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.865E+01	1.865E+01	0.202E+01	10.83	
CD-109	464.00D	1.05	2.711E+00	2.852E+00	1.129E+00	39.58	
SN-126	1.00E+05Y	1.00	2.777E-01	2.777E-01	1.099E-01	39.58	
TL-208	1.91Y	1.03	4.597E-01	4.754E-01	0.837E-01	17.61	
BI-211	7.04E+08Y	1.00	2.821E+00	2.821E+00	0.476E+00	16.88	
BI-212	1.91Y	1.03	1.115E+00	1.153E+00	0.383E+00	33.22	
PB-212	1.91Y	1.03	1.457E+00	1.507E+00	0.183E+00	12.15	
BI-214	1600.00Y	1.00	8.817E-01	8.817E-01	1.610E-01	18.26	
PB-214	1600.00Y	1.00	9.812E-01	9.813E-01	1.734E-01	17.67	
RA-226	1600.00Y	1.00	8.817E-01	8.817E-01	1.610E-01	18.26	
AC-228	5.75Y	1.01	1.404E+00	1.420E+00	0.328E+00	23.11	
RA-228	5.75Y	1.01	1.404E+00	1.420E+00	0.328E+00	23.11	
TH-228	1.91Y	1.03	1.457E+00	1.507E+00	0.183E+00	12.15	
TH-230	7.70E+04Y	1.00	8.817E-01	8.817E-01	1.610E-01	18.26	
TH-232	1.41E+10Y	1.00	1.457E+00	1.457E+00	0.177E+00	12.15	
TH-234	4.47E+09Y	1.00	2.057E+00	2.057E+00	3.210E+00	156.04	
U-234	2.45E+05Y	1.00	1.092E+00	1.092E+00	0.291E+00	26.67	
U-235	7.04E+08Y	1.00	2.222E-01	2.222E-01	3.554E-01	159.94	
NP-237	2.14E+06Y	1.00	8.154E-01	8.154E-01	3.640E-01	44.64	
U-238	4.47E+09Y	1.00	2.057E+00	2.057E+00	3.210E+00	156.04	
ANH-511	1.00E+09Y	1.00	1.007E-01	1.007E-01	0.724E-01	71.83	
			---------	---------			
	Total Activity :		4.319E+01	4.351E+01			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-224	1.91Y	1.03	4.008E+00	4.145E+00	1.375E+00	33.17	
			---------	---------			
	Total Activity :		4.008E+00	4.145E+00			

Grand Total Activity :	4.719E+01	4.766E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.27	36	308	1.39	254.96	252	10	4.96E-03	****	6.08E+00	
0	259.25	17	394	8.46	516.74	506	21	2.34E-03	****	4.29E+00	T
0	270.61	90	209	3.51	539.44	534	13	1.26E-02	69.1	4.17E+00	T
0	327.90	82	99	0.88	653.96	650	9	1.14E-02	49.0	3.65E+00	T
0	441.82	58	108	7.72	881.71	873	18	8.06E-03	88.0	2.98E+00	
0	573.11	14	28	1.37	1144.18	1142	6	1.93E-03	****	2.47E+00	T
0	785.67	29	19	1.60	1569.25	1566	8	4.00E-03	65.2	1.91E+00	T
0	843.51	28	15	2.72	1684.92	1681	9	3.87E-03	66.5	1.79E+00	
0	975.74	16	22	0.65	1949.41	1943	10	2.17E-03	****	1.56E+00	
0	1038.05	31	122	15.36	2074.06	2040	44	4.30E-03	****	1.47E+00	T
0	1109.56	16	9	1.19	2217.13	2211	9	2.22E-03	84.1	1.38E+00	
0	1161.38	10	15	0.63	2320.81	2318	7	1.33E-03	****	1.33E+00	
0	1507.35	7	12	1.22	3013.16	3009	12	9.04E-04	****	1.07E+00	
3	1587.31	15	8	2.87	3173.21	3168	20	2.13E-03	80.6	1.03E+00	
3	1591.43	33	3	2.61	3181.46	3168	20	4.56E-03	43.4	1.03E+00	
5	1720.67	16	1	3.56	3440.19	3435	47	2.19E-03	57.6	9.91E-01	
5	1728.70	21	5	3.57	3456.27	3435	47	2.90E-03	75.2	9.89E-01	
0	1763.26	64	17	1.54	3525.46	3519	15	8.89E-03	39.6	9.82E-01	
0	1837.96	3	2	1.02	3675.04	3672	7	4.17E-04	****	9.69E-01	T
0	1847.80	18	10	7.60	3694.74	3687	18	2.52E-03	****	9.68E-01	
0	1878.21	11	2	1.06	3755.63	3751	10	1.54E-03	84.3	9.65E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 14-APR-2006 10:48:39.25

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

DETECTOR DATA

Configuration	: DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055621.CNF;1		
Acquisition date	: 14-APR-2006 08:48:09	Detector SN#	: 1922864
Detector ID	: GAMMA16	Sensitivity	: 3.00000
Geometry	: CAN	Energy tolerance	: 2.00000
Elapsed live time	: 0 02:00:00.00	Abundance limit	: 75.00000
Elapsed real time	: 0 02:00:00.97	Half life ratio	: 8.00000

SAMPLE DATA

Sample date	: 11-MAR-2006 12:05:00	Nuclide Library	: EPI
Sample ID	: G1201055621	Analyst initials	: MJH1
Batch Number	: 513807	Sample Quantity	: 1.20050E+02 GRAM

QC DATA

CALIB. DATE/TIME	: 5-APR-2006 19:34:04.74	MS Isotope	:
MSD DPM	:	MSD Isotope	:
LCS DPM	:	LCS Isotope	:

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	1.865E+01	2.021E+00	5.939E-01	3.920E-02	31.408
CD-109	2.852E+00	1.129E+00	1.423E+00	1.507E-01	2.003
SN-126	2.777E-01	1.099E-01	1.397E-01	1.476E-02	1.987
TL-208	4.754E-01	8.374E-02	6.232E-02	4.363E-03	7.629
BI-211	2.821E+00	4.761E-01	3.356E-01	2.463E-02	8.404
BI-212	1.153E+00	3.832E-01	4.181E-01	3.605E-02	2.759
PB-212	1.507E+00	1.830E-01	9.791E-02	9.265E-03	15.388
BI-214	8.817E-01	1.610E-01	1.123E-01	9.046E-03	7.851
PB-214	9.813E-01	1.734E-01	1.141E-01	1.026E-02	8.599
RA-224	4.145E+00	1.375E+00	1.057E+00	8.796E-02	3.922
RA-226	8.817E-01	1.610E-01	1.123E-01	9.046E-03	7.851
AC-228	1.420E+00	3.281E-01	2.004E-01	2.365E-02	7.084
RA-228	1.420E+00	3.281E-01	2.004E-01	2.365E-02	7.084
TH-228	1.507E+00	1.830E-01	9.790E-02	9.264E-03	15.389
TH-230	8.817E-01	1.610E-01	1.123E-01	9.046E-03	7.851
TH-232	1.457E+00	1.770E-01	9.465E-02	8.957E-03	15.390
TH-234	2.057E+00	3.210E+00	2.928E+00	5.825E-01	0.703
U-234	1.092E+00	2.912E-01	2.102E-01	2.105E-02	5.193

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
U-235	2.222E-01	3.554E-01	3.226E-01	5.530E-02	0.689
NP-237	8.154E-01	3.640E-01	4.186E-01	9.696E-02	1.948
U-238	2.057E+00	3.210E+00	2.928E+00	5.825E-01	0.703
ANH-511	1.007E-01	7.235E-02	4.937E-02	3.004E-03	2.040

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.821E-02		3.915E-01	6.999E-01	4.857E-02	0.026
NA-22	6.004E-03		3.734E-02	6.985E-02	4.539E-03	0.086
AL-26	2.979E-02		2.622E-02	6.271E-02	3.608E-03	0.475
SC-46	-1.622E-02		4.190E-02	6.997E-02	6.484E-03	-0.232
V-48	-6.576E-02		1.422E-01	2.489E-01	2.204E-02	-0.264
CR-51	1.171E-02		5.670E-01	9.567E-01	7.609E-02	0.012
MN-54	3.519E-02		3.960E-02	7.405E-02	6.257E-03	0.475
CO-56	-3.283E-02		4.827E-02	6.524E-02	5.627E-03	-0.503
CO-57	1.183E-02		2.469E-02	4.397E-02	3.407E-03	0.269
CO-58	-2.973E-02		4.265E-02	6.881E-02	5.590E-03	-0.432
FE-59	2.988E-02		1.153E-01	2.152E-01	1.835E-02	0.139
CO-60	-6.448E-03		3.523E-02	6.332E-02	3.941E-03	-0.102
ZN-65	-2.748E-01		1.169E-01	1.622E-01	1.229E-02	-1.694
SE-75	-3.492E-03		5.177E-02	7.769E-02	6.379E-03	-0.045
KR-85	4.558E+00		7.823E+00	1.283E+01	7.811E-01	0.355
SR-85	2.846E-02		4.885E-02	8.010E-02	4.877E-03	0.355
Y-88	1.214E-02	+	3.750E-02	6.917E-02	3.936E-03	0.175
Y-91	6.455E-03		4.242E-02	7.627E-02	4.686E-03	0.085
NB-94	4.654E-03		3.102E-02	5.519E-02	3.669E-03	0.084
NB-95	6.842E-02		8.128E-02	1.351E-01	1.011E-02	0.506
ZR-95	-5.115E-02		8.329E-02	1.365E-01	1.141E-02	-0.375
RU-103	3.725E-02		4.590E-02	8.804E-02	1.124E-02	0.423
RH-106	1.217E-01		2.937E-01	5.406E-01	3.333E-02	0.225
RU-106	1.429E-01		2.963E-01	5.476E-01	6.528E-02	0.261
AG-108M	1.377E-02		2.894E-02	5.379E-02	3.435E-03	0.256
AG-110M	-4.558E-02		3.458E-02	5.285E-02	3.435E-03	-0.862
SN-113	-6.767E-02		4.209E-02	6.604E-02	4.050E-03	-1.025
SN-115	5.191E+00		4.408E+00	8.873E+00	8.167E-01	0.585
SN-117M	5.349E-02		1.299E-01	2.286E-01	1.858E-02	0.234
TE-123M	1.334E-03		2.889E-02	4.993E-02	4.090E-03	0.027
SB-124	-6.279E-02		7.103E-02	1.046E-01	6.807E-03	-0.600
SB-125	-3.445E-02		8.151E-02	1.417E-01	8.674E-03	-0.243
TE-125M	-8.494E-01		1.008E+01	1.761E+01	1.770E+00	-0.048
I-126	2.273E-01		4.564E-01	8.390E-01	5.200E-02	0.271
SB-126	1.240E-01		3.597E-01	6.561E-01	4.511E-02	0.189
I-131	-4.001E-01		5.315E-01	9.075E-01	6.667E-02	-0.441
BA-133	-8.957E-02		4.282E-02	6.387E-02	7.679E-03	-1.402
CS-134	6.660E-02	+	5.274E-02	8.237E-02	6.545E-03	0.809
CS-135	1.838E-01		1.614E-01	2.659E-01	2.539E-02	0.691

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CS-136	-2.272E-01		2.729E-01	4.532E-01	3.944E-02	-0.501
BA-137M	3.145E-02		3.530E-02	6.636E-02	4.075E-03	0.474
CS-137	3.325E-02		3.732E-02	7.015E-02	4.324E-03	0.474
CE-139	-9.122E-03		2.904E-02	4.918E-02	4.081E-03	-0.185
BA-140	4.465E-02		6.445E-01	1.155E+00	3.764E-01	0.039
LA-140	9.288E-02		2.180E-01	3.971E-01	2.454E-02	0.234
CE-141	9.313E-03		9.277E-02	1.448E-01	1.165E-02	0.064
CE-144	-4.723E-02		1.889E-01	3.239E-01	4.890E-02	-0.146
PM-144	-4.420E-03		3.494E-02	6.041E-02	3.980E-03	-0.073
PM-146	-1.919E-02		3.672E-02	6.316E-02	5.512E-03	-0.304
ND-147	3.422E-01		1.736E+00	3.134E+00	4.282E-01	0.109
PM-147	7.608E+03		4.987E+04	8.751E+04	6.785E+03	0.087
EU-152	-8.445E-02		9.638E-02	1.500E-01	1.135E-02	-0.563
GD-153	-5.985E-02		8.439E-02	1.270E-01	1.159E-02	-0.471
EU-154	1.690E-02		1.034E-01	1.934E-01	1.892E-02	0.087
EU-155	1.658E-02		9.582E-02	1.696E-01	1.449E-02	0.098
TB-160	-1.163E-01		1.452E-01	2.284E-01	2.082E-02	-0.509
TM-171	-1.438E+01		3.772E+01	5.911E+01	6.754E+00	-0.243
HF-181	-1.120E-02		5.601E-02	9.819E-02	5.918E-03	-0.114
TA-182	-3.271E-02		1.842E-01	3.273E-01	2.188E-02	-0.100
IR-192	-6.235E-03		3.964E-02	6.598E-02	4.957E-03	-0.094
HG-203	9.472E-03		5.618E-02	8.584E-02	7.114E-03	0.110
BI-207	1.242E-02		4.820E-02	9.049E-02	7.363E-03	0.137
BI-210	2.449E+00		1.258E+01	1.922E+01	1.963E+00	0.127
PB-210	2.449E+00		1.258E+01	1.922E+01	1.963E+00	0.127
PB-211	7.243E-02		8.924E-01	1.602E+00	9.986E-01	0.045
RN-219	2.107E-03		3.722E-01	6.684E-01	9.089E-02	0.003
RA-223	2.111E-01		6.020E-01	1.041E+00	1.782E-01	0.203
AC-227	1.297E-01		3.947E-01	6.796E-01	1.039E-01	0.191
TH-227	1.274E-01		3.881E-01	6.679E-01	1.194E-01	0.191
TH-229	1.951E-01		4.819E-01	8.404E-01	7.028E-02	0.232
PA-231	-6.880E-01		1.537E+00	2.507E+00	3.717E-01	-0.274
TH-231	4.988E-01	+	3.477E-01	3.506E-01	3.242E-02	1.422
PA-233	2.283E-02		6.237E-02	1.078E-01	8.458E-03	0.212
PA-234	-2.448E-02		2.468E-01	4.536E-01	8.618E-02	-0.054
PA-234M	2.067E+00		4.205E+00	8.050E+00	8.076E-01	0.257
NP-239	-1.843E-01		1.727E-01	2.846E-01	2.240E-02	-0.648
AM-241	-7.797E-02		2.386E-01	3.781E-01	5.120E-02	-0.206
AM-242	2.947E-01		1.991E+00	3.519E+00	3.008E-01	0.084
CM-247	-2.626E-03		3.409E-02	6.079E-02	3.516E-03	-0.043
CF-249	4.070E-02		3.532E-02	6.832E-02	3.995E-03	0.596
CF-251	1.328E-01		1.147E-01	2.081E-01	1.731E-02	0.638

General Engineering Labs, LLC
2040 SAVAGE ROAD
CHARLESTON ,SC 29417
GROSS GAMMA REPORT

BATCH ID	: 513807	SAMPLE ID	: G1201055621
ANALYST	: MJH1	DETECTOR	: GAMMA16
SAMPLE DATE	: 11-MAR-2006 12:05:00.00	COUNT TIME	: 0 02:00:00.00
ANALYSIS DATE	: 14-APR-2006 08:48:09.05	SAMPLE ALQT	: 120.050 GRAM

GROSS GAMMA ACTIVITY (pCi/GRAM) : 7.768E+00
GROSS GAMMA ERROR (pCi/GRAM) : 2.340E+00
GROSS GAMMA MDA (pCi/GRAM) : 6.056E+00
GROSS GAMMA DLC (pCi/GRAM) : 2.916E+00

VAX/VMS Nuclide Identification Report Generated 13-APR-2006 19:54:16.30

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055622.CNF;1
Sample date      : 25-MAR-2006 00:00:00 Acquisition date : 13-APR-2006 18:53:47
Sample ID        : G1201055622          Sample quantity  : 1.00000E+02 GRAM
Detector name    : WELL                 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00        Elapsed real time: 0 01:00:02.86  0.1%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513807               Detector SN#     : 3941466
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	32.88*	214	1083	2.17	64.73	62	9	5.94E-02	28.6	
2	0	50.31	58	913	1.00	99.34	97	6	1.60E-02	83.8	
3	0	53.76*	59	814	0.93	106.20	104	5	1.64E-02	74.1	
4	0	59.78	4434	1553	1.32	118.18	113	12	1.23E+00	2.4	
5	0	88.31*	4651	855	1.30	174.84	170	10	1.29E+00	1.9	
6	0	101.03*	35	238	1.29	200.11	197	6	9.69E-03	73.4	
7	0	122.29*	1719	552	1.29	242.35	236	13	4.77E-01	3.7	
8	0	136.50	205	249	1.67	270.59	266	9	5.69E-02	15.6	
9	0	166.13	785	398	1.37	329.46	324	13	2.18E-01	6.4	
10	0	186.52*	55	271	1.05	369.98	365	11	1.53E-02	61.1	
11	0	238.26*	29	236	1.32	472.78	467	11	7.96E-03	107.9	
12	0	279.71*	37	151	1.92	555.15	552	8	1.03E-02	60.9	
13	0	391.67*	413	193	1.54	777.64	771	15	1.15E-01	8.8	
14	0	478.71	41	170	4.71	950.62	945	13	1.13E-02	68.4	
15	0	497.26	46	62	2.47	987.49	984	8	1.28E-02	33.4	
16	0	593.91	24	39	0.96	1179.60	1177	6	6.67E-03	45.9	
17	0	649.06*	34	63	1.94	1289.23	1286	9	9.41E-03	45.7	
18	0	661.60*	1515	143	1.61	1314.14	1308	15	4.21E-01	3.1	
19	0	782.38	29	68	1.58	1554.26	1550	11	7.96E-03	59.8	
20	0	792.06	48	81	4.10	1573.50	1566	15	1.33E-02	43.8	
21	0	897.99	410	93	1.93	1784.11	1779	14	1.14E-01	7.0	
22	0	929.65*	48	83	3.42	1847.06	1842	12	1.34E-02	40.7	
23	0	1172.91*	1478	75	2.00	2330.81	2322	16	4.10E-01	2.9	
24	0	1261.26	7	28	1.04	2506.55	2495	15	1.84E-03	183.2	
25	0	1317.04	14	6	1.43	2617.49	2614	8	3.84E-03	40.9	
26	0	1332.08*	1339	34	1.95	2647.40	2638	20	3.72E-01	2.9	
27	0	1339.61*	10	1	0.75	2662.39	2660	7	2.70E-03	40.7	
28	0	1364.83	9	0	1.88	2712.56	2710	6	2.50E-03	33.3	
29	0	1539.91*	3	11	1.00	3060.86	3059	10	7.90E-04	225.5	
30	0	1589.97*	18	12	5.36	3160.47	3154	15	4.93E-03	47.9	
31	0	1692.94	18	0	4.02	3365.33	3356	21	5.00E-03	23.6	
32	0	1835.70	185	27	1.95	3649.44	3638	21	5.14E-02	10.1	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                               DETECTOR DATA                           *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055622  *
* Acquisition date : 13-APR-2006 18:53:47 Detector SN#    : 3941466    *
* Detector ID      : WELL                 Sensitivity     : 3.000      *
* Geometry         : CAN                  Energy tolerance: 2.000      *
* Elapsed live time:    0 01:00:00.00     Abundance limit : 75.000     *
* Elapsed real time:    0 01:00:02.86     Half life ratio :  8.000     *
*************************************************************************
*                                                                       *
*                               SAMPLE DATA                             *
*                                                                       *
* Sample date      : 25-MAR-2006 00:00:00 Nuclide Library : FERMC       *
* Sample ID        : G1201055622          Analyst initials: MJH1        *
* Batch Number     : 513807               Sample Quantity : 1.0000E+02 GRAM *
* Recovery         :    1.00000           Carrier Weight :    0.00000   *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
* Standard Weight  :   0.00000                                          *
* CALIB. DATE/TIME : 14-DEC-2005 17:16:53 MS Isotope      :             *
* MSD DPM          : ********            MSD Isotope     :             *
* LCS DPM          :    0.000           LCS Isotope     :             *
* LCSD DPM         :    0.000           LCSD Isotope    :             *
*************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
BE-7	2.089E+00	2.857E+00	3.240E+00	0.000E+00
CO-57	3.139E+00	2.333E-01	1.495E-01	0.000E+00
CO-60	1.398E+01	8.219E-01	2.846E-01	0.000E+00
Y-88	2.917E+00	5.893E-01	2.338E-01	0.000E+00
RU-103	3.151E-01	2.105E-01	3.849E-01	0.000E+00
CD-109	1.872E+02	7.088E+00	4.632E+00	0.000E+00
SN-113	2.448E+00	4.321E-01	3.501E-01	0.000E+00
SN-126	1.862E+01	7.048E-01	5.717E-01	0.000E+00
BA-137M	9.501E+00	5.943E-01	3.035E-01	0.000E+00
CS-137	1.004E+01	6.282E-01	3.208E-01	0.000E+00
CE-139	1.815E+00	2.313E-01	1.622E-01	0.000E+00
TM-171	1.347E+01	7.685E+01	1.274E+02	0.000E+00
HG-203	1.597E-01	1.947E-01	2.603E-01	0.000E+00
PB-212	1.420E-01	3.065E-01	3.493E-01	0.000E+00
TH-228	1.420E-01	3.065E-01	3.493E-01	0.000E+00
NP-237	5.467E+01	2.070E+00	1.565E+00	0.000E+00
AM-241	2.280E+01	1.080E+00	7.231E-01	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM	K.L. Act error) Ided	MDA (pCi/GRAM	)	
NA-22	-7.667E-03	1.312E-01	2.350E-01	0.000E+00	NOT IDENT.
NA-24	0.000E+00	3.270E+08	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-2.584E-02	1.148E-01	2.138E-01	0.000E+00	NOT IDENT.
K-40	1.304E+00	1.226E+00	2.636E+00	0.000E+00	NOT IDENT.
SC-46	-1.547E-02	2.670E-01	4.586E-01	0.000E+00	NOT IDENT.
V-48	9.094E-02	4.961E-01	8.691E-01	0.000E+00	NOT IDENT.
CR-51	3.669E-01	1.608E+00	2.792E+00	0.000E+00	NOT IDENT.
MN-54	1.203E-01	1.941E-01	3.526E-01	0.000E+00	NOT IDENT.
CO-56	4.469E-02	2.219E-01	3.922E-01	0.000E+00	NOT IDENT.
MN-56	0.000E+00	2.000E+41	0.000E+00	0.000E+00	SHORT HLIF

CO-58	3.043E-02	2.234E-01	3.935E-01	0.000E+00 NOT IDENT.
FE-59	-2.473E-01	5.579E-01	9.257E-01	0.000E+00 NOT IDENT.
ZN-65	1.678E-01	4.216E-01	7.545E-01	0.000E+00 NOT IDENT.
SE-75	-8.644E-02	1.628E-01	2.730E-01	0.000E+00 FAIL ABUN
KR-85	-1.781E+01	3.427E+01	5.558E+01	0.000E+00 NOT IDENT.
SR-85	-9.588E-02	1.845E-01	2.993E-01	0.000E+00 NOT IDENT.
Y-91	-1.686E-01	1.866E-01	2.925E-01	0.000E+00 NOT IDENT.
NB-94	1.394E-01	1.503E-01	2.821E-01	0.000E+00 NOT IDENT.
NB-95	-1.505E-01	2.425E-01	4.069E-01	0.000E+00 NOT IDENT.
NB-95M	-2.229E+00	1.633E+01	2.462E+01	0.000E+00 NOT IDENT.
ZR-95	2.796E-01	3.803E-01	6.990E-01	0.000E+00 NOT IDENT.
MO-99	-2.080E+01	1.261E+01	2.066E+01	0.000E+00 NOT IDENT.
TC-99M	0.000E+00	5.157E+22	0.000E+00	0.000E+00 SHORT HLIF
RH-106	-3.866E-02	1.477E+00	2.615E+00	0.000E+00 NOT IDENT.
RU-106	1.835E-03	1.481E+00	2.626E+00	0.000E+00 NOT IDENT.
AG-108M	-7.043E-02	1.575E-01	2.591E-01	0.000E+00 NOT IDENT.
AG-110M	1.897E-01	2.199E-01	3.590E-01	0.000E+00 NOT IDENT.
CD-115	0.000E+00	2.212E+02	0.000E+00	0.000E+00 SHORT HLIF
SN-115	-5.553E-01	2.575E+01	3.842E+01	0.000E+00 NOT IDENT.
SN-117M	8.807E-04	2.224E-01	3.884E-01	0.000E+00 NOT IDENT.
TE-123M	-6.131E-03	9.357E-02	1.630E-01	0.000E+00 NOT IDENT.
SB-124	0.000E+00	2.778E-01	5.823E-01	0.000E+00 FAIL ABUN
SB-125	3.937E-01	4.270E-01	7.625E-01	0.000E+00 NOT IDENT.
TE-125M	6.038E+00	3.436E+01	5.669E+01	0.000E+00 NOT IDENT.
I-126	9.802E-02	1.247E+00	1.931E+00	0.000E+00 NOT IDENT.
SB-126	2.424E-01	8.977E-01	1.608E+00	0.000E+00 NOT IDENT.
SB-127	1.071E+00	1.556E+01	2.753E+01	0.000E+00 FAIL ABUN
I-131	-2.132E-01	7.409E-01	1.242E+00	0.000E+00 NOT IDENT.
I-132	0.000E+00	1.305E+41	0.000E+00	0.000E+00 SHORT HLIF
TE-132	-1.472E+00	6.236E+00	1.067E+01	0.000E+00 NOT IDENT.
BA-133	7.022E-02	1.799E-01	3.135E-01	0.000E+00 NOT IDENT.
I-133	0.000E+00	1.189E+06	0.000E+00	0.000E+00 SHORT HLIF
CS-134	1.591E-01	2.100E-01	3.482E-01	0.000E+00 FAIL ABUN
CS-135	2.067E-01	5.585E-01	9.789E-01	0.000E+00 NOT IDENT.
I-135	0.000E+00	3.754E+21	0.000E+00	0.000E+00 SHORT HLIF
CS-136	3.417E-01	8.054E-01	1.428E+00	0.000E+00 FAIL ABUN
BA-140	-7.232E-01	1.571E+00	2.559E+00	0.000E+00 NOT IDENT.
LA-140	-1.651E-01	4.875E-01	7.300E-01	0.000E+00 NOT IDENT.
CE-141	2.803E-02	2.081E-01	3.667E-01	0.000E+00 NOT IDENT.
CE-143	0.000E+00	4.866E+03	0.000E+00	0.000E+00 SHORT HLIF
CE-144	6.704E-01	6.899E-01	1.131E+00	0.000E+00 NOT IDENT.
PM-144	-4.445E-02	1.650E-01	2.853E-01	0.000E+00 FAIL ABUN
PR-144	0.000E+00	2.000E+41	0.000E+00	0.000E+00 SHORT HLIF
PM-146	-9.876E-02	2.075E-01	3.402E-01	0.000E+00 NOT IDENT.
ND-147	-6.315E-01	3.619E+00	6.021E+00	0.000E+00 NOT IDENT.
PM-147	0.000E+00	4.810E+05	7.566E+05	0.000E+00 FAIL ABUN
PM-149	0.000E+00	1.535E+03	0.000E+00	0.000E+00 SHORT HLIF
EU-152	-1.561E-01	4.196E-01	7.006E-01	0.000E+00 FAIL ABUN
GD-153	-3.588E-02	2.458E-01	4.022E-01	0.000E+00 NOT IDENT.
EU-154	1.051E-02	3.608E-01	6.555E-01	0.000E+00 FAIL ABUN
EU-155	1.392E-01	3.598E-01	6.004E-01	0.000E+00 FAIL ABUN
TB-160	8.858E-01	8.664E-01	1.600E+00	0.000E+00 FAIL ABUN
HF-181	2.232E-01	2.456E-01	3.918E-01	0.000E+00 FAIL ABUN
TA-182	6.503E-02	6.602E-01	1.179E+00	0.000E+00 FAIL ABUN
IR-192	-5.442E-02	1.394E-01	2.338E-01	0.000E+00 NOT IDENT.
BI-207	-9.711E-02	3.020E-01	5.071E-01	0.000E+00 FAIL ABUN
TL-208	1.462E-01	1.708E-01	3.051E-01	0.000E+00 NOT IDENT.
BI-210	-4.835E+00	4.840E+00	7.827E+00	0.000E+00 NOT IDENT.
PB-210	-4.835E+00	4.840E+00	7.827E+00	0.000E+00 NOT IDENT.
BI-211	2.595E-03	8.449E-01	1.440E+00	0.000E+00 NOT IDENT.
PB-211	7.917E-01	4.037E+00	6.936E+00	0.000E+00 NOT IDENT.
BI-212	8.827E-01	1.395E+00	2.556E+00	0.000E+00 NOT IDENT.
BI-214	1.679E-01	3.271E-01	5.947E-01	0.000E+00 NOT IDENT.
PB-214	-1.444E-01	2.998E-01	4.972E-01	0.000E+00 FAIL ABUN
RN-219	8.435E-01	1.725E+00	3.023E+00	0.000E+00 NOT IDENT.
RA-223	-8.144E-01	2.578E+00	4.336E+00	0.000E+00 FAIL ABUN
RA-224	1.332E+00	2.473E+00	3.888E+00	0.000E+00 NOT IDENT.
RA-226	1.679E-01	3.271E-01	5.947E-01	0.000E+00 NOT IDENT.
AC-227	-3.015E-02	1.478E+00	2.539E+00	0.000E+00 NOT IDENT.
TH-227	-2.966E-02	1.454E+00	2.498E+00	0.000E+00 NOT IDENT.
AC-228	8.812E-01	7.840E-01	1.451E+00	0.000E+00 NOT IDENT.
RA-228	8.812E-01	7.840E-01	1.451E+00	0.000E+00 NOT IDENT.
TH-229	-1.370E+00	1.633E+00	2.731E+00	0.000E+00 FAIL ABUN
TH-230	1.679E-01	3.271E-01	5.947E-01	0.000E+00 NOT IDENT.
PA-231	1.845E+00	6.691E+00	1.028E+01	0.000E+00 NOT IDENT.
TH-231	-2.840E-01	6.626E-01	1.116E+00	0.000E+00 NOT IDENT.
TH-232	1.393E-01	3.005E-01	3.444E-01	0.000E+00 FAIL ABUN
PA-233	2.048E-01	2.554E-01	4.557E-01	0.000E+00 FAIL ABUN

PA-234	-1.284E+00	1.938E+00	3.191E+00	0.000E+00 FAIL ABUN
PA-234M	-9.960E+00	2.465E+01	4.133E+01	0.000E+00 NOT IDENT.
TH-234	-2.226E+00	3.455E+00	4.954E+00	0.000E+00 NOT IDENT.
U-234	-1.778E-01	4.903E-01	8.256E-01	0.000E+00 NOT IDENT.
U-235	1.646E-01	6.157E-01	1.092E+00	0.000E+00 FAIL ABUN
U-238	-2.226E+00	3.455E+00	4.954E+00	0.000E+00 NOT IDENT.
NP-239	-2.171E-02	6.952E-01	1.134E+00	0.000E+00 FAIL ABUN
AM-242	3.964E+00	8.303E+00	1.244E+01	0.000E+00 FAIL ABUN
CM-247	8.260E-02	1.539E-01	2.706E-01	0.000E+00 FAIL ABUN
CF-249	1.832E-01	1.878E-01	3.028E-01	0.000E+00 NOT IDENT.
CF-251	-3.675E-02	3.937E-01	6.840E-01	0.000E+00 NOT IDENT.
ANH-511	0.000E+00	1.516E-01	2.838E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 13-APR-2006 19:54:20.50

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*********************************************************************
*                          GENERAL ENG. LABS, LLC.                  *
*                              2040 Savage Road                     *
*                            Charleston, SC 29414                   *
*********************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055622.CNF;1
Sample date      : 25-MAR-2006 00:00:00 Acquisition date : 13-APR-2006 18:53:47
Sample ID        : G1201055622          Sample quantity  : 1.00000E+02 GRAM
Detector name    : WELL                 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00        Elapsed real time: 0 01:00:02.86  0.1%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513807               Detector SN#     : 3941466
Matrix Spike DPM :                      LCS DPM          :
*********************************************************************
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
BE-7	477.59	41	10.42*	1.811E+00	1.616E+00	2.089E+00	136.75
CO-57	122.06	1719	85.51*	5.057E+00	2.984E+00	3.139E+00	7.43
	136.47	205	10.47	4.895E+00	3.002E+00	3.158E+00	31.11
CO-60	1173.24	1478	99.90	8.069E-01	1.376E+01	1.386E+01	5.81
	1332.50	1339	99.98*	7.247E-01	1.388E+01	1.398E+01	5.88
Y-88	898.02	410	93.40	1.013E+00	3.255E+00	3.703E+00	13.97
	1836.01	185	99.38*	5.454E-01	2.565E+00	2.917E+00	20.20
RU-103	497.08	46	89.00*	1.746E+00	2.223E-01	3.151E-01	66.79
	610.33	------	5.60	1.436E+00	------ Line Not Found		------
CD-109	88.03	4651	3.79*	5.069E+00	1.817E+02	1.872E+02	3.79
SN-113	391.69	413	64.90*	2.199E+00	2.173E+00	2.448E+00	17.65
SN-126	64.28	------	9.60	4.325E+00	------ Line Not Found		------
	86.94	4651	8.90	5.069E+00	7.739E+01	7.739E+01	3.79
	87.57	4651	37.00*	5.069E+00	1.862E+01	1.862E+01	3.79
BA-137M	661.65	1515	89.98*	1.332E+00	9.489E+00	9.501E+00	6.25
CS-137	661.66	1515	85.12*	1.332E+00	1.003E+01	1.004E+01	6.25
CE-139	165.85	785	80.35*	4.466E+00	1.643E+00	1.815E+00	12.75
PM-147	121.30	1719	0.00*	5.057E+00	6.380E+06	6.472E+06	7.43
TM-171	51.87	58	0.81	3.375E+00	1.588E+01	1.620E+01	167.56
	59.40	4434	0.21	4.067E+00	3.842E+03	3.918E+03	4.74
	66.72	------	0.16*	4.447E+00	------ Line Not Found		------
HG-203	70.83	------	4.75	4.625E+00	------ Line Not Found		------
	72.87	------	8.00	4.702E+00	------ Line Not Found		------
	82.60	------	3.55	4.973E+00	------ Line Not Found		------
	279.20	37	77.30*	3.016E+00	1.190E-01	1.597E-01	121.86
PB-212	74.80	------	10.70	4.768E+00	------ Line Not Found		------
	87.30	4651	8.00	5.069E+00	8.610E+01	8.781E+01	3.79
	115.19	------	0.60	5.115E+00	------ Line Not Found		------
	238.63	29	44.60*	3.463E+00	1.393E-01	1.420E-01	215.78
	300.09	------	3.41	2.829E+00	------ Line Not Found		------
TH-228	84.40	------	1.21	5.007E+00	------ Line Not Found		------
	238.60	29	44.60*	3.463E+00	1.393E-01	1.420E-01	215.78

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	300.10	------	3.41	2.829E+00	------ Line Not Found		------
NP-237	86.48	4651	12.60*	5.069E+00	5.467E+01	5.467E+01	3.79
	95.87	------	2.60	5.140E+00	------ Line Not Found		------
AM-241	59.54	4434	35.90*	4.067E+00	2.280E+01	2.280E+01	4.74

Flag: "*" = Keyline

Sample ID : G1201055622 Acquisition date : 13-APR-2006 18:53:47

Total number of lines in spectrum 32
Number of unidentified lines 9
Number of lines tentatively identified by NID 23 71.88%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BE-7	53.44D	1.29	1.616E+00	2.089E+00	2.857E+00	136.75	
CO-57	270.90D	1.05	2.984E+00	3.139E+00	0.233E+00	7.43	
CO-60	5.27Y	1.01	1.388E+01	1.398E+01	0.082E+01	5.88	
Y-88	106.60D	1.14	2.565E+00	2.917E+00	0.589E+00	20.20	
RU-103	39.35D	1.42	2.223E-01	3.151E-01	2.105E-01	66.79	
CD-109	464.00D	1.03	1.817E+02	1.872E+02	0.071E+02	3.79	
SN-113	115.10D	1.13	2.173E+00	2.448E+00	0.432E+00	17.65	
SN-126	1.00E+05Y	1.00	1.862E+01	1.862E+01	0.070E+01	3.79	
BA-137M	30.17Y	1.00	9.489E+00	9.501E+00	0.594E+00	6.25	
CS-137	30.17Y	1.00	1.003E+01	1.004E+01	0.063E+01	6.25	
CE-139	137.66D	1.10	1.643E+00	1.815E+00	0.231E+00	12.75	
PM-147	2.62Y	1.01	6.380E+06	6.472E+06	0.481E+06	7.43	
TM-171	1.92Y	1.02	3.842E+03	3.918E+03	0.186E+03	4.74	K
HG-203	46.61D	1.34	1.190E-01	1.597E-01	1.947E-01	121.86	
PB-212	1.91Y	1.02	1.393E-01	1.420E-01	3.065E-01	215.78	
TH-228	1.91Y	1.02	1.393E-01	1.420E-01	3.065E-01	215.78	
NP-237	2.14E+06Y	1.00	5.467E+01	5.467E+01	0.207E+01	3.79	
AM-241	432.20Y	1.00	2.280E+01	2.280E+01	0.108E+01	4.74	
	Total Activity :		6.384E+06	6.476E+06			

Grand Total Activity : 6.384E+06 6.476E+06

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	32.88	214	1083	2.17	64.73	62	9	5.94E-02	57.2	1.65E+00	
0	53.76	59	814	0.93	106.20	104	5	1.64E-02	****	3.65E+00	
0	101.03	35	238	1.29	200.11	197	6	9.69E-03	****	5.16E+00	T
0	186.52	55	271	1.05	369.98	365	11	1.53E-02	****	4.16E+00	T
0	593.91	24	39	0.96	1179.60	1177	6	6.67E-03	91.9	1.47E+00	
0	649.06	34	63	1.94	1289.23	1286	9	9.41E-03	91.5	1.36E+00	T
0	782.38	29	68	1.58	1554.26	1550	11	7.96E-03	****	1.14E+00	T
0	792.06	48	81	4.10	1573.50	1566	15	1.33E-02	87.7	1.13E+00	
0	929.65	48	83	3.42	1847.06	1842	12	1.34E-02	81.4	9.83E-01	
0	1261.26	7	28	1.04	2506.55	2495	15	1.84E-03	****	7.59E-01	T
0	1317.04	14	6	1.43	2617.49	2614	8	3.84E-03	81.8	7.32E-01	
0	1339.61	10	1	0.75	2662.39	2660	7	2.70E-03	81.5	7.21E-01	
0	1364.83	9	0	1.88	2712.56	2710	6	2.50E-03	66.7	7.10E-01	T
0	1539.91	3	11	1.00	3060.86	3059	10	7.90E-04	****	6.40E-01	
0	1589.97	18	12	5.36	3160.47	3154	15	4.93E-03	95.8	6.22E-01	
0	1692.94	18	0	4.02	3365.33	3356	21	5.00E-03	47.1	5.88E-01	T

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 13-APR-2006 19:54:24.39

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055622.CNF;1    *
* Acquisition date : 13-APR-2006 18:53:47  Detector SN#    : 3941466    *
* Detector ID      : WELL                  Sensitivity     : 3.00000    *
* Geometry         : CAN                   Energy tolerance: 2.00000    *
* Elapsed live time: 0 01:00:00.00         Abundance limit : 75.00000   *
* Elapsed real time: 0 01:00:02.86         Half life ratio : 8.00000    *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      : 25-MAR-2006 00:00:00  Nuclide Library : EPI        *
* Sample ID        : G1201055622           Analyst initials: MJH1       *
* Batch Number     : 513807                Sample Quantity : 1.00000E+02 GRAM  *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
*                                                                       *
* CALIB. DATE/TIME : 14-DEC-2005 17:16:53.5MS Isotope      :           *
* MSD DPM          :                      MSD Isotope     :           *
* LCS DPM          :                      LCS Isotope     :           *
*************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.089E+00	2.857E+00	3.259E+00	0.000E+00	0.641
CO-57	3.139E+00	2.333E-01	1.498E-01	0.000E+00	20.957
CO-60	1.398E+01	8.219E-01	2.871E-01	0.000E+00	48.694
Y-88	2.917E+00	5.893E-01	2.360E-01	0.000E+00	12.362
RU-103	3.151E-01	2.105E-01	3.871E-01	0.000E+00	0.814
CD-109	1.872E+02	7.088E+00	4.639E+00	0.000E+00	40.355
SN-113	2.448E+00	4.321E-01	3.519E-01	0.000E+00	6.956
SN-126	1.862E+01	7.048E-01	5.725E-01	0.000E+00	32.519
BA-137M	9.501E+00	5.943E-01	3.055E-01	0.000E+00	31.098
CS-137	1.004E+01	6.282E-01	3.230E-01	0.000E+00	31.097
CE-139	1.815E+00	2.313E-01	1.626E-01	0.000E+00	11.158
TM-171	1.347E+01	7.685E+01	1.275E+02	0.000E+00	0.106
HG-203	1.597E-01	1.947E-01	2.615E-01	0.000E+00	0.611
PB-212	1.420E-01	3.065E-01	3.507E-01	0.000E+00	0.405
TH-228	1.420E-01	3.065E-01	3.507E-01	0.000E+00	0.405
NP-237	5.467E+01	2.070E+00	1.567E+00	0.000E+00	34.883
AM-241	2.280E+01	1.080E+00	7.234E-01	0.000E+00	31.514

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	-7.667E-03		1.312E-01	2.369E-01	0.000E+00	-0.032

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AL-26	-2.584E-02		1.148E-01	2.158E-01	0.000E+00	-0.120
K-40	1.304E+00		1.226E+00	2.659E+00	0.000E+00	0.490
SC-46	-1.547E-02		2.670E-01	4.620E-01	0.000E+00	-0.033
V-48	9.094E-02		4.961E-01	8.758E-01	0.000E+00	0.104
CR-51	3.669E-01		1.608E+00	2.806E+00	0.000E+00	0.131
MN-54	1.203E-01		1.941E-01	3.551E-01	0.000E+00	0.339
CO-56	4.469E-02		2.219E-01	3.951E-01	0.000E+00	0.113
CO-58	3.043E-02		2.234E-01	3.963E-01	0.000E+00	0.077
FE-59	-2.473E-01		5.579E-01	9.331E-01	0.000E+00	-0.265
ZN-65	1.678E-01		4.216E-01	7.606E-01	0.000E+00	0.221
SE-75	-8.644E-02		1.628E-01	2.742E-01	0.000E+00	-0.315
KR-85	-1.781E+01		3.427E+01	5.592E+01	0.000E+00	-0.318
SR-85	-9.588E-02		1.845E-01	3.011E-01	0.000E+00	-0.318
Y-91	-1.686E-01		1.866E-01	2.944E-01	0.000E+00	-0.573
NB-94	1.394E-01		1.503E-01	2.840E-01	0.000E+00	0.491
NB-95	-1.505E-01		2.425E-01	4.098E-01	0.000E+00	-0.367
NB-95M	-2.229E+00		1.633E+01	2.472E+01	0.000E+00	-0.090
ZR-95	2.796E-01		3.803E-01	7.040E-01	0.000E+00	0.397
MO-99	-2.080E+01		1.261E+01	2.071E+01	0.000E+00	-1.004
RH-106	-3.866E-02		1.477E+00	2.632E+00	0.000E+00	-0.015
RU-106	1.835E-03		1.481E+00	2.643E+00	0.000E+00	0.001
AG-108M	-7.043E-02		1.575E-01	2.605E-01	0.000E+00	-0.270
AG-110M	1.897E-01		2.199E-01	3.614E-01	0.000E+00	0.525
SN-115	-5.553E-01		2.575E+01	3.871E+01	0.000E+00	-0.014
SN-117M	8.807E-04		2.224E-01	3.896E-01	0.000E+00	0.002
TE-123M	-6.131E-03		9.357E-02	1.634E-01	0.000E+00	-0.038
SB-124	5.892E-01	+	2.778E-01	5.876E-01	0.000E+00	1.003
SB-125	3.937E-01		4.270E-01	7.667E-01	0.000E+00	0.513
TE-125M	6.038E+00		3.436E+01	5.680E+01	0.000E+00	0.106
I-126	9.802E-02		1.247E+00	1.944E+00	0.000E+00	0.050
SB-126	2.424E-01		8.977E-01	1.620E+00	0.000E+00	0.150
SB-127	1.071E+00		1.556E+01	2.772E+01	0.000E+00	0.039
I-131	-2.132E-01		7.409E-01	1.248E+00	0.000E+00	-0.171
TE-132	-1.472E+00		6.236E+00	1.071E+01	0.000E+00	-0.137
BA-133	7.022E-02		1.799E-01	3.150E-01	0.000E+00	0.223
CS-134	1.591E-01		2.100E-01	3.507E-01	0.000E+00	0.454
CS-135	2.067E-01		5.585E-01	9.831E-01	0.000E+00	0.210
CS-136	3.417E-01		8.054E-01	1.439E+00	0.000E+00	0.238
BA-140	-7.232E-01		1.571E+00	2.574E+00	0.000E+00	-0.281
LA-140	-1.651E-01		4.875E-01	7.365E-01	0.000E+00	-0.224
CE-141	2.803E-02		2.081E-01	3.677E-01	0.000E+00	0.076
CE-144	6.704E-01		6.899E-01	1.134E+00	0.000E+00	0.591
PM-144	-4.445E-02		1.650E-01	2.873E-01	0.000E+00	-0.155
PM-146	-9.876E-02		2.075E-01	3.421E-01	0.000E+00	-0.289
ND-147	-6.315E-01		3.619E+00	6.058E+00	0.000E+00	-0.104
PM-147	6.472E+06		4.810E+05	7.583E+05	0.000E+00	8.534
EU-152	-1.561E-01		4.196E-01	7.041E-01	0.000E+00	-0.222
GD-153	-3.588E-02		2.458E-01	4.029E-01	0.000E+00	-0.089

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-154	1.051E-02		3.608E-01	6.610E-01	0.000E+00	0.016
EU-155	1.392E-01		3.598E-01	6.015E-01	0.000E+00	0.231
TB-160	8.858E-01		8.664E-01	1.612E+00	0.000E+00	0.549
HF-181	2.232E-01		2.456E-01	3.941E-01	0.000E+00	0.566
TA-182	6.503E-02		6.602E-01	1.189E+00	0.000E+00	0.055
IR-192	-5.442E-02		1.394E-01	2.349E-01	0.000E+00	-0.232
BI-207	-9.711E-02		3.020E-01	5.111E-01	0.000E+00	-0.190
TL-208	1.462E-01		1.708E-01	3.070E-01	0.000E+00	0.476
BI-210	-4.835E+00		4.840E+00	7.825E+00	0.000E+00	-0.618
PB-210	-4.835E+00		4.840E+00	7.825E+00	0.000E+00	-0.618
BI-211	2.595E-03		8.449E-01	1.448E+00	0.000E+00	0.002
PB-211	7.917E-01		4.037E+00	6.973E+00	0.000E+00	0.114
BI-212	8.827E-01		1.395E+00	2.573E+00	0.000E+00	0.343
BI-214	1.679E-01		3.271E-01	5.986E-01	0.000E+00	0.281
PB-214	-1.444E-01		2.998E-01	4.997E-01	0.000E+00	-0.289
RN-219	8.435E-01		1.725E+00	3.039E+00	0.000E+00	0.278
RA-223	-8.144E-01		2.578E+00	4.357E+00	0.000E+00	-0.187
RA-224	1.332E+00		2.473E+00	3.904E+00	0.000E+00	0.341
RA-226	1.679E-01		3.271E-01	5.986E-01	0.000E+00	0.281
AC-227	-3.015E-02		1.478E+00	2.550E+00	0.000E+00	-0.012
TH-227	-2.966E-02		1.454E+00	2.509E+00	0.000E+00	-0.012
AC-228	8.812E-01		7.840E-01	1.461E+00	0.000E+00	0.603
RA-228	8.812E-01		7.840E-01	1.461E+00	0.000E+00	0.603
TH-229	-1.370E+00		1.633E+00	2.740E+00	0.000E+00	-0.500
TH-230	1.679E-01		3.271E-01	5.986E-01	0.000E+00	0.281
PA-231	1.845E+00		6.691E+00	1.033E+01	0.000E+00	0.179
TH-231	-2.840E-01		6.626E-01	1.120E+00	0.000E+00	-0.254
TH-232	1.393E-01	+	3.005E-01	3.458E-01	0.000E+00	0.403
PA-233	2.048E-01		2.554E-01	4.579E-01	0.000E+00	0.447
PA-234	-1.284E+00		1.938E+00	3.215E+00	0.000E+00	-0.399
PA-234M	-9.960E+00		2.465E+01	4.165E+01	0.000E+00	-0.239
TH-234	-2.226E+00		3.455E+00	4.956E+00	0.000E+00	-0.449
U-234	-1.778E-01		4.903E-01	8.293E-01	0.000E+00	-0.214
U-235	1.646E-01		6.157E-01	1.095E+00	0.000E+00	0.150
U-238	-2.226E+00		3.455E+00	4.956E+00	0.000E+00	-0.449
NP-239	-2.171E-02		6.952E-01	1.137E+00	0.000E+00	-0.019
AM-242	3.964E+00		8.303E+00	1.247E+01	0.000E+00	0.318
CM-247	8.260E-02		1.539E-01	2.720E-01	0.000E+00	0.304
CF-249	1.832E-01		1.878E-01	3.044E-01	0.000E+00	0.602
CF-251	-3.675E-02		3.937E-01	6.862E-01	0.000E+00	-0.054
ANH-511	3.106E-01		1.516E-01	2.855E-01	0.000E+00	1.088

```
*****************************************************************************
*                                                                           *
*                          General Engineering Labs, LLC                    *
*                                2040 SAVAGE ROAD                           *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID     : 513807                    SAMPLE ID  : G1201055622       *
*   ANALYST      : MJH1                      DETECTOR   : WELL              *
*   SAMPLE DATE  : 25-MAR-2006 00:00:00.00   COUNT TIME :    0 01:00:00.00  *
*   ANALYSIS DATE: 13-APR-2006 18:53:47.55   SAMPLE ALQT:  100.000 GRAM     *
*                                                                           *
*****************************************************************************
```

GROSS GAMMA ACTIVITY	(pCi/GRAM)	: 6.382E+01
GROSS GAMMA ERROR	(pCi/GRAM)	: 8.824E+00
GROSS GAMMA MDA	(pCi/GRAM)	: 2.385E+01
GROSS GAMMA DLC	(pCi/GRAM)	: 1.167E+01

Radiochemistry Batch Checklist, Rev 4

Batch# 517518 Product: P6-210 Date: 4/12/06

Criteria:	Yes	No	Comments
Sample Solids are less than 100 mg for GAB.	NA		
If activity less 10* MDA, error is 150% or less of sample activity. If greater 10* MDA, error is 40% or less. If below the MDA, error is okay.	✓		
Instrument source check is within limits. Instument bkg check is within limits.	✓		
Method RDL has been met.	✓		
If duplicate activities are less 5* MDA, then rpd is 100% or less. If greater 5* MDA, then rpd 20% or less. If below the MDA, the rpd is 0%. Or meets the client's required RER acceptance criteria.	✓		
Tracer yield is 15-125% . Carrier yield 25-125%. Or meets the client's contract acceptance criteria.	✓		
Method blank is less than the RDL. (If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time. Special requirements page checked	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.	NA		
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms. All lineouts initialed and dated. No transcription errors are apparent.	✓		
QC data entered into QC database. Batch entered into Case Narrative.	✓		
Batch non-conformances completed If applicable.	NA		

General Engineering Laboratories

2/22/2005

Primary Review Performed By: [signature] 4/12/06

Secondary Review Performed By: KO 4/12/06

4/8-4/15

MWHL

Pb-210 Que Sheet

04/04/06

Batch #:517518 **Analyst: BXF1** **Minimum DueDate 04/08/2006**

Spike Isotope: Pb210 **Spike Code:** ET 491 E **Expiration Date:** 11-11-06 **Vol:** 0.1ml **Bi Separation Date/Time:** 4-6-06 / 1210

LCS Isotope: Pb210 **LCS Code:** ET 491 E **Expiration Date:** 11-11-06 **Vol:** 0.1ml **Std Wt:** 13.88

Carrier: Pb **Carrier Code:** 1006864 **Expiration Date:** 1-19-08 **Vol:** 1ml **Analytical Scale #:** 38110047

Prep Date: 4-5-06 **Initials:** BXF **Pipet #:** 4497063 **Balance #:** 50410272 **Witness:** SDG

Sample ID	Client Description	Type	Hazard Code	RDL	Client	Matrix	Collection Date & Time	Bkr#	Aliquot (mL or (g))	Det	Initial Pb Weight (g)	Final Pb Weight (g)	Net Pb Weight (mg)
158270001	2603100106 M118-0.5	SAMPLE		3 pCi/g	MWHL002	SOIL	08-MAR-06	1	2.144	2D	.0804	.0891	8.7
158270002	2603100107 M118-5	SAMPLE		3 pCi/g	MWHL002	SOIL	08-MAR-06	2	2.125	3B	.0764	.0845	8.1
158437001	2603150347 M119-0.5	SAMPLE		3 pCi/g	MWHL002	SOIL	14-MAR-06	3	2.649	3C	.0744	.0832	8.8
158437002	2603150349 M119-0.5D	SAMPLE		3 pCi/g	MWHL002	SOIL	14-MAR-06	4	2.252	3D	.0763	.0853	9
158437003	2603150350 M119-5	SAMPLE		3 pCi/g	MWHL002	SOIL	14-MAR-06	5	2.424	4A	.0731	.0810	7.9
158437004	2603150352 M119-50	SAMPLE		3 pCi/g	MWHL002	SOIL	14-MAR-06	6	2.493	4B	.0810	.0896	8.6
158438001	2603150303 M116-0.5	SAMPLE		3 pCi/g	MWHL002	SOIL	11-MAR-06	7	2.249	4C	.0804	.0889	8.5
158438002	2603150304 M11600.5D	SAMPLE		3 pCi/g	MWHL002	SOIL	11-MAR-06	8	2.192	4D	.0739	.0838	9.9
158438003	2603150305 M116-5	SAMPLE		3 pCi/g	MWHL002	SOIL	11-MAR-06	9	2.670	3B	.0770	.0857	8.7
158438004	2603150307 M117-0.5	SAMPLE		3 pCi/g	MWHL002	SOIL	11-MAR-06	10	2.527	3C	.0717	.0819	10.2
158438005	2603150308 M117-5	SAMPLE		3 pCi/g	MWHL002	SOIL	11-MAR-06	11	2.233	3D	.0770	.0851	8.1
1201063770	MB for batch 517518	MB		3 pCi/g	QC ACCOUNT	SOIL		12	2.670	4A	.0754	.0852	9.8
1201063771	2603150305 M116-5(158438003DU)DUP			3 pCi/g	QC ACCOUNT	SOIL	11-MAR-06	13	2.134	4B	.0762	.0856	9.4
1201063772	2603150305 M116-5(158438003MS)MS			3 pCi/g	QC ACCOUNT	SOIL	11-MAR-06	14	2.205	4C	.0816	~~.0885~~ .0898	~~8.9~~ 8.2 JG 4/12/06
1201063773	LCS for batch 517518	LCS		3 pCi/g	QC ACCOUNT	SOIL		15	2.670	4D	.0822	.0909	8.7

Instrument Used (circle one): LB4100 S/N 8219 (PIC S/N:10751-4)

Data Reviewed By: [signature] 4/12/06

Page 1 of 1

[initials] 4/12/06

Aliquot Correction to Dry Weight for Batch 517518

Sample Id	Aliquot (G)	Sample Type	Parent Sample Id	Loss (Dec)	Corrected Aliquot (G)
158270001	2.084	SAMPLE	NA	.0280	2.14410427
158270002	2.065	SAMPLE	NA	.0280	2.12470238
158437001	2.584	SAMPLE	NA	.0244	2.64876425
158437002	2.189	SAMPLE	NA	.0279	2.25182628
158437003	2.358	SAMPLE	NA	.0274	2.42444593
158437004	2.417	SAMPLE	NA	.0304	2.49278052
158438001	2.198	SAMPLE	NA	.0227	2.24916801
158438002	2.134	SAMPLE	NA	.0263	2.19174555
158438003	2.582	SAMPLE	NA	.0328	2.66975175
158438004	2.473	SAMPLE	NA	.0213	2.52707019
158438005	2.176	SAMPLE	NA	.0253	2.23250783
1201063770		MB	NA	NA	
1201063771	2.064	DUP	158438003	.0328	2.13414702
1201063772	2.133	MS	158438003	.0328	2.20549205
1201063773		LCS	NA	NA	

General Engineering Laboratories, LLC

JE 4/11/06

Lead-210 Soil

Filename : PB210.XLS
File type : Excel
Version # : 1

Batch : 517518
Analyst : BXF1
Prep Date : 4/5/2006
Pb-210 Abundance : 1

Calibration Date : 7/29/2005
Calibration Due Date : 7/29/2006

Spike S/N :	ET491-E
Spike Exp Date :	11/11/2006
Spike Activity (dpm/ml):	405.91
Spike Volume Added:	0.1
LCS S/N :	ET491-E
LCS Exp Date :	11/11/2006
LCS Activity (dpm/ml):	405.91
LCS Volume Added:	0.1
Carrier S/N :	1006864
Carrier Exp Date :	1/19/2008
Carrier Volume Added:	1.0
Carrier Weight (mg/ml):	13.88
Carrier Weight StDev.:	0.05

Pipet, 0.1 ml Stdev : +/-	0.000701	ml
Pipet, 0.5 ml Stdev : +/-	0.002564	ml
Pipet, 1 ml Stdev : +/-	0.005480	ml
Procedure Code :	GFC__PBS	
Parmname :	Lead-210	
Required MDA:	3	pCi/G
Halflife of Pb-210 :	22.26	years
Halflife of Bi-210 :	5.013	days
Batch counted on :	PIC	
BKG Count time :	500	min

Sample Characteristics				Carrier Calculations				
Sample ID	Sample Aliquot G	Sample Aliquot StDev.	Sample Date/Time	Carrier Weight (Standard)	Net Weight (Sample)	Net Weight StDev.	Carrier Aliquot (mL)	Carrier Aliquot StDev.
158270001	2.144	3.4421E-03	3/8/2006 11:10	13.88	8.7	0.044723	1.0	0.005480
158270002	2.125	3.4401E-03	3/8/2006 11:20	13.88	8.1	0.042144	1.0	0.005480
158437001	2.649	3.4943E-03	3/14/2006 7:30	13.88	8.8	0.045152	1.0	0.005480
158437002	2.252	3.4532E-03	3/14/2006 12:00	13.88	9.0	0.046012	1.0	0.005480
158437003	2.424	3.4710E-03	3/14/2006 7:35	13.88	7.9	0.041284	1.0	0.005480
158437004	2.493	3.4781E-03	3/14/2006 9:00	13.88	8.6	0.044293	1.0	0.005480
158438001	2.249	3.4529E-03	3/11/2006 11:55	13.88	8.5	0.043863	1.0	0.005480
158438002	2.192	3.4470E-03	3/11/2006 12:00	13.88	9.9	0.049880	1.0	0.005480
158438003	2.670	3.4964E-03	3/11/2006 12:05	13.88	8.7	0.044723	1.0	0.005480
158438004	2.527	3.4817E-03	3/11/2006 7:38	13.88	10.2	0.051170	1.0	0.005480
158438005	2.233	3.4513E-03	3/11/2006 7:48	13.88	8.1	0.042144	1.0	0.005480
1201063770	2.670	3.4964E-03	4/5/2006 0:00	13.88	9.8	0.049450	1.0	0.005480
1201063771	2.134	3.4410E-03	3/11/2006 12:05	13.88	9.4	0.047731	1.0	0.005480
1201063772	2.205	3.4484E-03	3/11/2006 12:05	13.88	8.2	0.042574	1.0	0.005480
1201063773	2.670	3.4964E-03	4/5/2006 0:00	13.88	8.7	0.044723	1.0	0.005480

4/12/06 4/12/06

Count Raw Data

Detector ID	Counting Time	Gross Counts Alpha	Gross Counts Beta	Gross Beta CPM	Weekly Bkg CPM	Weekly Bkg Count Time	Detector Efficiency	Detector Efficiency Error	Count Start Date/Time	Bi-210 Separation Date/Time	Bi-210 Ingrowth	Pb-210 Decay	Sample Recovery %	Sample Recovery Error %
2D	60	3	33	0.550	0.458	500	0.3559	0.00479	4/11/2006 11:44	4/6/2006 12:10	0.499	0.997	62.68%	0.98%
3B	60	3	41	0.683	0.382	500	0.3502	0.00655	4/11/2006 11:44	4/6/2006 12:10	0.499	0.997	58.36%	0.99%
3C	60	3	37	0.617	0.434	500	0.3458	0.00535	4/11/2006 11:44	4/6/2006 12:10	0.499	0.998	63.40%	0.98%
3D	60	6	40	0.667	0.416	500	0.3457	0.00464	4/11/2006 11:44	4/6/2006 12:10	0.499	0.998	64.84%	0.98%
4A	60	3	43	0.717	0.392	500	0.3579	0.00744	4/11/2006 11:44	4/6/2006 12:10	0.499	0.998	56.92%	0.99%
4B	60	15	50	0.833	0.454	500	0.3563	0.00196	4/11/2006 11:44	4/6/2006 12:10	0.499	0.998	61.96%	0.98%
4C	60	2	46	0.767	0.396	500	0.3542	0.00426	4/11/2006 11:44	4/6/2006 12:10	0.499	0.997	61.24%	0.98%
4D	60	5	51	0.850	0.444	500	0.3386	0.00816	4/11/2006 11:44	4/6/2006 12:10	0.499	0.997	71.33%	0.97%
3B	60	3	40	0.667	0.382	500	0.3451	0.00655	4/11/2006 12:49	4/6/2006 12:10	0.502	0.997	62.68%	0.98%
3C	60	7	24	0.400	0.434	500	0.3337	0.00535	4/11/2006 12:49	4/6/2006 12:10	0.502	0.997	73.49%	0.97%
3D	60	3	33	0.550	0.416	500	0.3538	0.00464	4/11/2006 12:49	4/6/2006 12:10	0.502	0.997	58.36%	0.99%
4A	60	7	26	0.433	0.392	500	0.3413	0.00744	4/11/2006 12:48	4/6/2006 12:10	0.502	0.999	70.61%	0.97%
4B	60	5	32	0.533	0.454	500	0.3493	0.00196	4/11/2006 12:49	4/6/2006 12:10	0.502	0.997	67.72%	0.97%
4C	60	6	222	3.700	0.396	500	0.3568	0.00426	4/11/2006 12:49	4/6/2006 12:10	0.502	0.997	59.08%	0.98%
4D	60	10	240	4.000	0.444	500	0.3488	0.00816	4/11/2006 12:49	4/6/2006 12:10	0.502	0.999	62.68%	0.98%

JEJ 4/12/06

Results

Decision Level pCi/G	Critical Level pCi/G	MDA pCi/G	Sample Act. Conc.	Sample Act. Error	Net Count Rate	Net Count Rate Error	2 SIGMA Counting Uncertainty	2 SIGMA Total Prop. Uncertainty	Sample QC	Sample Type	RPD	RER	Nominal	Recovery
0.5446	0.3845	0.8542	**0.1740**	1.0915	0.0920	0.1004	0.3723	0.3723		SAMPLE				
0.5478	0.3867	0.8674	**0.6278**	0.3660	0.3013	0.1102	0.4502	0.4504		SAMPLE				
0.4364	0.3081	0.6864	**0.2844**	0.5781	0.1827	0.1056	0.3222	0.3223		SAMPLE				
0.4915	0.3470	0.7748	**0.4490**	0.4361	0.2507	0.1093	0.3837	0.3838		SAMPLE				
0.4878	0.3444	0.7714	**0.5946**	0.3477	0.3247	0.1128	0.4050	0.4053		SAMPLE				
0.4709	0.3325	0.7391	**0.6233**	0.3208	0.3793	0.1216	0.3917	0.3919		SAMPLE				
0.4964	0.3504	0.7845	**0.6873**	0.3145	0.3707	0.1165	0.4234	0.4236		SAMPLE				
0.4843	0.3419	0.7609	**0.6937**	0.3025	0.4060	0.1227	0.4109	0.4113		SAMPLE				
0.4092	0.2889	0.6481	**0.4431**	0.3830	0.2847	0.1090	0.3325	0.3326		SAMPLE				
0.4065	0.2870	0.6394	**-0.0493**	2.5530	-0.0340	0.0868	0.2468	0.2468		SAMPLE				
0.5349	0.3777	0.8433	**0.2613**	0.7463	0.1340	0.1000	0.3821	0.3822		SAMPLE				
0.3714	0.2622	0.5873	**0.0576**	2.1648	0.0413	0.0895	0.2446	0.2446		MB				
0.5104	0.3603	0.8010	**0.1413**	1.2477	0.0793	0.0990	0.3454	0.3454	158438003	DUP	0.0%			
0.5178	0.3656	0.8183	**6.3905**	0.0764	3.3040	0.2499	0.9474	0.9571	158438003	MS			8.31	76.9%
0.4356	0.3076	0.6844	**5.4652**	0.0742	3.5560	0.2599	0.7829	0.7949		LCS			6.85	79.8%

JEM 4/12/06

SampleID	Instr	Time	Alpha	Beta	Count Start Time	Count End Time
158270001	2D	60	3	33	4/11/2006 11:44	4/11/2006 12:44
158270002	3B	60	3	41	4/11/2006 11:44	4/11/2006 12:44
158437001	3C	60	3	37	4/11/2006 11:44	4/11/2006 12:44
158437002	3D	60	6	40	4/11/2006 11:44	4/11/2006 12:44
158437003	4A	60	3	43	4/11/2006 11:44	4/11/2006 12:44
158437004	4B	60	15	50	4/11/2006 11:44	4/11/2006 12:44
158438001	4C	60	2	46	4/11/2006 11:44	4/11/2006 12:44
158438002	4D	60	5	51	4/11/2006 11:44	4/11/2006 12:44
158438003	3B	60	3	40	4/11/2006 12:49	4/11/2006 13:49
158438004	3C	60	7	24	4/11/2006 12:49	4/11/2006 13:49
158438005	3D	60	3	33	4/11/2006 12:49	4/11/2006 13:49
1201063770	4A	60	7	26	4/11/2006 12:48	4/11/2006 13:48
1201063771	4B	60	5	32	4/11/2006 12:49	4/11/2006 13:49
1201063772	4C	60	6	222	4/11/2006 12:49	4/11/2006 13:49
1201063773	4D	60	10	240	4/11/2006 12:49	4/11/2006 13:49

4/12/06

Radiochemistry ~~Bioassay~~ Total Uranium Checklist Rev. 2

Batch#: 521637 Client: MWHL Date: 42106

Criteria:	Yes	No	Comments
Calibration percent discrepancy is less than or equal to 10% (postive or negative).	✓		
Calibration R2 is greater than or equal to 0.99.	✓		
All calibration standard and sample lifetimes are 150-350us.	✓	✓	see narrative 4/21/06
All calibration standard and sample R2s are greater than or equal to 0.96.	✓		
All reference intensity ratios are between 0.8 and 1.2.	✓		
All reference lifetimes are 150-350us.	✓		
CRDL has been met.	✓		
All CCVs are 90-110% of known value.	✓		
One of the CCVs is a concentration used during calibration, and the other is not.	✓		
Method blank activity is less than the CRDL.	✓		
LCS, LCSD, and method spike (if applicable) recovery is 75-125%.	✓		
Special requirements page has been reviewed.	✓		
No blank spaces on data forms. All lineouts initialed and dated. No transcription errors are apparent.	✓		
Batch entered into a case narrative.	✓		
Batch entered into an NCR (if applicable).	N/A		

Primary Review Performed By: 4/21/06

Secondary Review Performed By: 4/21/06

Total Uranium Que Sheet

Batch #: 521637 — **Analyst:** DRS1 — **Minimum DueDate:** 04/08/2006 — **Comments**

Spike Isotope: Natural U — **Spike Code:** 0873 4/21/06 — **Expiration Date:** 6/17/07 — **Vol:** 2.0 — **Nom Conc:** 9.43

LCS Isotope: Natural U — **LCS Code:** 0873 4/21/06 — **Expiration Date:** 4/21/06 6/17/07 — **Vol:** 2.0 — **Nom Conc:** 10.0 / 1.0

LCSD Code: 0873 4/21/06 — Expiration Date: 4/21/06 6/17/07 — Vol: 0.2

Prep Date: 4-14-06 — **Initials:** DRS — **Pipet ID:** 5628507 (2.0) / 1607205 (0.2) — **Witness:** 4/14/06 KD

Sample I	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Bkr#	Sample Aliquot (g or m	Aliquot for Analysis (mL)
158269001	2603140361 M121-0.5	SAMPLE		1 ug/g	SOIL	MWHL002	1	0.105:50	1
158269002	2603140362 M121-5	SAMPLE		1 ug/g	SOIL	MWHL002	2	0.104:50	1
158269003	2603140364 M121-5D	SAMPLE		1 ug/g	SOIL	MWHL002	3	0.106:50	1
158269004	2603140365 M121-80	SAMPLE		1 ug/g	SOIL	MWHL002	4	0.107:50	1
158270001	2603100106 M118-0.5	SAMPLE		1 ug/g	SOIL	MWHL002	5	0.104:50	1
158270002	2603100107 M118-5	SAMPLE		1 ug/g	SOIL	MWHL002	6	0.107:50	1
158437001	2603150347 M119-0.5	SAMPLE		1 ug/g	SOIL	MWHL002	7	0.107:50	1
158437002	2603150349 M119-0.5D	SAMPLE		1 ug/g	SOIL	MWHL002	8	0.105:50	1
158437003	2603150350 M119-5	SAMPLE		1 ug/g	SOIL	MWHL002	9	0.104:50 4/21/06	1
158437004	2603150352 M119-50	SAMPLE		1 ug/g	SOIL	MWHL002	10	0.104:~~50~~ 100	1
158438001	2603150303 M116-0.5	SAMPLE		1 ug/g	SOIL	MWHL002	11	0.105:~~50~~ 100	1
158438002	2603150304 M116-0.5D	SAMPLE		1 ug/g	SOIL	MWHL002	12	0.105:~~50~~ 100	1
158438003	2603150305 M116-5	SAMPLE		1 ug/g	SOIL	MWHL002	13	0.107:50	1
158438004	2603150307 M117-0.5	SAMPLE		1 ug/g	SOIL	MWHL002	14	0.105:50 4/13/06	1
158438005	2603150308 M117-5	SAMPLE		1 ug/g	SOIL	MWHL002	15	0.107:~~50~~ 100	1
1201073174	MB for batch 521637	MB		1 ug/g	SOIL	QC ACCOUNT	16	0.100:50 4/21/06	1
1201073175	2603140361 M121-0.5(158269001DUDUP			1 ug/g	SOIL	QC ACCOUNT	17	0.105:~~50~~ 100	1
1201073176	2603140361 M121-0.5(158269001MMS			1 ug/g	SOIL	QC ACCOUNT	18	0.106:~~50~~ 100	1
1201073177	LCS for batch 521637	LCS		1 ug/g	SOIL	QC ACCOUNT	19	0.100:50	1
1201073178	LCSD for batch 521637	LCSD		1 ug/g	SOIL	QC ACCOUNT	20	0.100:50	1

Instrument Used (circle one): KPA-10 S/N 89-05050-0035, KPA-10A S/N 89-05040-025, KPA-11 S/N 94-45050-064

Data Reviewed By: [signature] 4/21/06

[signature] 4/21/06

General Engineering Laboratories, Radiochemistry Division

Weight/Loss Aliquot Correction Report

Select What to Correct Aliquot to

◉ Dry Weight ○ Wet Weight

Submit

Batch ID: 521637

Calculate Corrected Aliquot

Aliquot Correction to Dry Weight for Batch 521637

Sample Id	Aliquot (G)	Sample Type	Parent Sample Id	Loss (Dec)	Corrected Aliquot (G)
158269001	0.102	SAMPLE	NA	.0257	0.10469174
158269002	0.100	SAMPLE	NA	.0386	0.10401854
158269003	0.102	SAMPLE	NA	.0392	0.10616967
158269004	0.103	SAMPLE	NA	.0352	0.10676703
158270001	0.101	SAMPLE	NA	.0280	0.10391292
158270002	0.104	SAMPLE	NA	.0280	0.10700680
158437001	0.104	SAMPLE	NA	.0244	0.10660661
158437002	0.102	SAMPLE	NA	.0279	0.10492749
158437003	0.101	SAMPLE	NA	.0274	0.10384607
158437004	0.101	SAMPLE	NA	.0304	0.10416666
158438001	0.103	SAMPLE	NA	.0227	0.10539777
158438002	0.102	SAMPLE	NA	.0263	0.10476009
158438003	0.103	SAMPLE	NA	.0328	0.10650055
158438004	0.103	SAMPLE	NA	.0213	0.10525201
158438005	0.104	SAMPLE	NA	.0253	0.10670074
1201073174		MB	NA	NA	
1201073175	0.102	DUP	158269001	.0257	0.10469174
1201073176	0.103	MS	158269001	.0257	0.10571813
1201073177		LCS	NA	NA	
1201073178		LCSD	NA	NA	

General Engineering Laboratories, LLC

Uranium Soil

Filename : TOTU.XLS
File type : Excel
Version # : 1

Batch : 521637
Analyst : DRS1
Prep Date : 4/14/2006
Nat-U Abundance : 1

Calibration Date : 4/21/2006 10:36:21
Calibration Due Date : 4/22/2006 10:36:21

Spike S/N :	0873	
Spike Exp Date :	6/17/2007	
Spike Activity (ug/L):	500.00	
Spike Volume Added(mL):	2.0	
Pipet, 0.1 ml Stdev : +/-	0.000701	ml
Pipet, 0.5 ml Stdev : +/-	0.002564	ml
Pipet, 1.0 ml Stdev : +/-	0.005480	ml
Pipet, 5.0 ml Stdev : +/-	0.025729	ml

LCS S/N :	0873
LCS Exp Date :	6/17/2007
LCS Activity (ug/L):	500.00
LCS Volume Added(mL):	2.0
Procedure Code :	KPATOTUS
Parmname :	Total Uranium
Batch counted on :	KPA11AUTO1

Sample Characteristics								KPA Raw Data			
Sample ID	Initial Aliquot G	Initial Sample StDev.	Final Aliquot L	Final Aliquot StDev.	Sample Counted mL	Sample Counted StDev.	Sample Date/Time	Analysis Range	Intensity	Lifetime (us)	R^2
158269001	0.105	3.2300E-03	0.050	2.2223E-04	1.000	5.4802E-03	3/10/2006 7:46	Low	28614.670	151.5168	0.9939
158269002	0.104	3.2299E-03	0.050	2.2223E-04	1.000	5.4802E-03	3/10/2006 7:55	Low	34701.800	161.5325	0.9988
158269003	0.106	3.2301E-03	0.050	2.2223E-04	1.000	5.4802E-03	3/10/2006 12:00	Low	30768.590	156.9704	0.9988
158269004	0.107	3.2302E-03	0.050	2.2223E-04	1.000	5.4802E-03	3/10/2006 12:00	Low	30057.580	152.0697	0.9982
158270001	0.104	3.2299E-03	0.050	2.2223E-04	1.000	5.4802E-03	3/8/2006 11:10	Low	23422.450	161.6889	0.9931
158270002	0.107	3.2302E-03	0.050	2.2223E-04	1.000	5.4802E-03	3/8/2006 11:20	Low	29697.340	163.0796	0.9936
158437001	0.107	3.2302E-03	0.050	2.2223E-04	1.000	5.4802E-03	3/14/2006 7:30	Low	20928.610	168.3646	0.9869
158437002	0.105	3.2300E-03	0.050	2.2223E-04	1.000	5.4802E-03	3/14/2006 12:00	Low	27183.960	150.7522	0.9962
158437003	0.104	3.2299E-03	0.050	2.2223E-04	1.000	5.4802E-03	3/14/2006 7:35	Low	24490.810	163.1401	0.9925
158437004	0.104	3.2299E-03	0.100	4.3713E-04	1.000	5.4802E-03	3/14/2006 9:00	Low	48143.040	177.4590	0.9999
158438001	0.105	3.2300E-03	0.100	4.3713E-04	1.000	5.4802E-03	3/11/2006 11:55	Low	27306.000	168.7448	0.9993
158438002	0.105	3.2300E-03	0.100	4.3713E-04	1.000	5.4802E-03	3/11/2006 12:00	Low	26756.080	177.7031	0.9996
158438003	0.107	3.2302E-03	0.050	2.2223E-04	1.000	5.4802E-03	3/11/2006 12:05	Low	26025.400	151.7966	0.9986
158438004	0.105	3.2300E-03	0.050	2.2223E-04	1.000	5.4802E-03	3/11/2006 7:38	Low	17226.710	183.7544	0.9691
158438005	0.107	3.2302E-03	0.100	4.3713E-04	1.000	5.4802E-03	3/11/2006 7:48	Low	23974.620	180.5077	0.9997
1201073174	0.100	4.3713E-04	0.050	2.2223E-04	1.000	5.4802E-03	4/14/2006 0:00	Low	728.844	312.1344	0.9892
1201073175	0.105	3.2300E-03	0.100	4.3713E-04	1.000	5.4802E-03	3/10/2006 7:46	Low	28723.490	178.3609	0.9997
1201073176	0.106	3.2301E-03	0.100	4.3713E-04	1.000	5.4802E-03	3/10/2006 7:46	Low	99722.360	169.4966	0.9987
1201073177	0.100	4.3713E-04	0.050	2.2223E-04	1.000	5.4802E-03	4/14/2006 0:00	High	1061.044	292.8112	0.9986
1201073178	0.100	4.3713E-04	0.050	2.2223E-04	1.000	5.4802E-03	4/14/2006 0:00	Low	10101.030	305.5775	0.9998

4/21/06

4/21/06

Ref Ratio	Results (ug/L)	Error (ug/L)	Count Date/Time	Dilution Corrected Results KPA Result ug/G	KPA Error ug/G	Results (pCi) Decision Level pCi/G	Critical Level pCi/G	MDA pCi/G	pCi/ug= 0.67 Sample Act. Conc. pCi/G	Sample Act. Error pCi/G	1 SIGMA Counting Uncertainty	1 SIGMA Total Prop. Uncertainty
0.9835	5.1510	0.1688	4/19/2006 10:06	2.4528	0.0804	0.0514	0.0363	0.0726	1.6434	0.0220	0.1056	0.4687
0.9676	6.2798	0.1069	4/19/2006 10:08	3.0191	0.0514	0.0519	0.0366	0.0733	2.0228	0.0114	0.0675	0.5688
0.9653	5.5504	0.0972	4/19/2006 10:10	2.6181	0.0458	0.0509	0.0360	0.0719	1.7541	0.0117	0.0602	0.4889
0.9649	5.4185	0.1095	4/19/2006 10:12	2.5320	0.0512	0.0504	0.0356	0.0712	1.6965	0.0135	0.0672	0.4719
0.9740	4.1881	0.1367	4/19/2006 10:14	2.0135	0.0657	0.0519	0.0366	0.0733	1.3491	0.0219	0.0863	0.3864
0.9750	5.3517	0.1678	4/19/2006 10:16	2.5008	0.0784	0.0504	0.0356	0.0712	1.6755	0.0210	0.1030	0.4727
0.9829	3.7256	0.1570	4/19/2006 10:18	1.7410	0.0734	0.0504	0.0356	0.0712	1.1664	0.0282	0.0963	0.3353
0.9864	4.8857	0.1307	4/19/2006 10:21	2.3265	0.0622	0.0514	0.0363	0.0726	1.5588	0.0179	0.0817	0.4408
0.9854	4.3862	0.1472	4/19/2006 10:23	2.1088	0.0708	0.0519	0.0366	0.0733	1.4129	0.0225	0.0929	0.4053
0.9240	6.6969	0.0786	4/20/2006 15:03	6.4393	0.0756	0.1038	0.0733	0.1466	4.3143	0.0079	0.0992	1.2140
0.9236	3.8265	0.0543	4/20/2006 15:06	3.6443	0.0518	0.1028	0.0726	0.1452	2.4417	0.0095	0.0680	0.6850
0.9274	3.7508	0.0484	4/20/2006 15:08	3.5722	0.0461	0.1028	0.0726	0.1452	2.3933	0.0086	0.0606	0.6708
0.9914	4.6708	0.0860	4/19/2006 10:31	2.1826	0.0402	0.0504	0.0356	0.0712	1.4624	0.0123	0.0528	0.4060
0.9870	3.0392	0.1787	4/19/2006 10:33	1.4472	0.0851	0.0514	0.0363	0.0726	0.9696	0.0394	0.1117	0.2917
0.9312	3.3676	0.0417	4/20/2006 15:11	3.1473	0.0390	0.1009	0.0712	0.1425	2.1087	0.0083	0.0512	0.5855
0.9901	-0.0203	-0.0005	4/19/2006 10:37	-0.0101	-0.0002	0.0540	0.0381	0.0762	-0.0068	0.0153	0.0003	0.0004
0.9340	4.0218	0.0498	4/20/2006 15:13	3.8303	0.0474	0.1028	0.0726	0.1452	2.5663	0.0083	0.0623	0.7191
0.9343	13.8022	0.2222	4/20/2006 15:15	13.0209	0.2096	0.1018	0.0719	0.1438	8.7240	0.0108	0.2753	2.4397
1.0093	16.0709	0.5189	4/19/2006 10:46	8.0355	0.2594	0.0540	0.0381	0.0762	5.3838	0.0216	0.3407	0.4289
0.9904	1.7177	0.0201	4/19/2006 10:48	0.8589	0.0100	0.0540	0.0381	0.0762	0.5754	0.0078	0.0132	0.0308

4/24/06

MDA Study Information

Effective Date: 4/1/2006
Expiration Date: 7/1/2006
Average: 1.040000000
StDev.: 0.048900000

Results (ug) Decision Level ug/G	Critical Level ug/G	MDA ug/G	Sample Act. Conc. ug/G	Sample Act. Error ug/G	2 SIGMA Counting Uncertainty	2 SIGMA Total Prop. Uncertainty	Sample QC	Sample Type	RPD	RER	Nominal	Recovery
0.0767	0.0542	0.1083	**2.4528**	0.0328	0.1576	0.6996		SAMPLE				
0.0775	0.0547	0.1094	**3.0191**	0.0170	0.1007	0.8489		SAMPLE				
0.0760	0.0537	0.1073	**2.6181**	0.0175	0.0898	0.7297		SAMPLE				
0.0753	0.0532	0.1063	**2.5320**	0.0202	0.1003	0.7043		SAMPLE				
0.0775	0.0547	0.1094	**2.0135**	0.0326	0.1289	0.5767		SAMPLE				
0.0753	0.0532	0.1063	**2.5008**	0.0314	0.1537	0.7054		SAMPLE				
0.0753	0.0532	0.1063	**1.7410**	0.0421	0.1438	0.5004		SAMPLE				
0.0767	0.0542	0.1083	**2.3265**	0.0267	0.1219	0.6579		SAMPLE				
0.0775	0.0547	0.1094	**2.1088**	0.0336	0.1387	0.6049		SAMPLE				
0.1549	0.1094	0.2188	**6.4393**	0.0117	0.1481	1.8120		SAMPLE				
0.1535	0.1083	0.2167	**3.6443**	0.0142	0.1014	1.0223		SAMPLE				
0.1535	0.1083	0.2167	**3.5722**	0.0129	0.0904	1.0012		SAMPLE				
0.0753	0.0532	0.1063	**2.1826**	0.0184	0.0788	0.6060		SAMPLE				
0.0767	0.0542	0.1083	**1.4472**	0.0588	0.1668	0.4353		SAMPLE				
0.1506	0.1063	0.2126	**3.1473**	0.0124	0.0764	0.8739		SAMPLE				
0.0806	0.0569	0.1138	**-0.0101**	0.0229	0.0005	0.0007		MB				
0.1535	0.1083	0.2167	**3.8303**	0.0124	0.0930	1.0732	158269001	DUP	43.8%	2.1073		
0.1520	0.1073	0.2146	**13.0209**	0.0161	0.4109	3.6413	158269001	MS			9.43	112.0%
0.0806	0.0569	0.1138	**8.0355**	0.0323	0.5085	0.6402		LCS			10.00	80.4%
0.0806	0.0569	0.1138	**8.8589**	0.0117	0.0197	0.0460		LCSD	161.4%	21.9166	1.00	85.9%

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Sample-ID	Sample-Description	Refernce-ReferenceRatio	Sample-Lifetime	Sample-R^2	Sample-AnalysisDate	Analysis-Range	Sample-Intercept	Result-AnalyticalResult	Result-AnalyticalUncertainty	Standard	Recovery
1.0 ug/L	ConfTst	1.015179	304.8153	0.999527	4/19/2006 8:00	Low	5791.411	0	0	1.0 ug/L	#VALUE!
2	CChkStd	0.9863393	305.553	0.9998211	4/19/2006 9:20	Low	11466.49	1.970959	2.29E-02	2	99%
5	CChkStd	0.9887033	312.284	0.999953	4/19/2006 9:23	Low	28480.97	5.126175	5.84E-02	5	103%
50	CChkStd	0.9964994	323.7815	0.9996001	4/19/2006 9:25	High	3221.531	48.97681	1.546921	50	98%
250	CChkStd	0.9969206	304.4304	0.9998451	4/19/2006 9:27	High	16614.59	253.6043	7.979593	250	101%
158269001	521637'	0.9834651	151.5168	0.9938796	4/19/2006 10:06	Low	28614.67	5.15097	0.1688437		
158269002	521637'1	0.9675801	161.5325	0.9988071	4/19/2006 10:08	Low	34701.8	6.279786	0.1068649		
158269003	521637'2	0.9653266	156.9704	0.9987552	4/19/2006 10:10	Low	30768.59	5.550398	9.72E-02		
158269004	521637'3	0.9649115	152.0697	0.9981679	4/19/2006 10:12	Low	30057.58	5.418547	0.1094643		
158270001	521637'4	0.9739848	161.6889	0.9930981	4/19/2006 10:14	Low	23422.45	4.188107	0.1367392		
158270002	521637'5	0.9749774	163.0796	0.9935971	4/19/2006 10:16	Low	29697.34	5.351743	0.1677889		
158437001	521637'6	0.982896	168.3646	0.9869373	4/19/2006 10:18	Low	20928.61	3.725644	0.1569821		
158437002	521637'7	0.9863939	150.7522	0.9962325	4/19/2006 10:21	Low	27183.96	4.885654	0.130657		
158437003	521637'8	0.985447	163.1401	0.9925245	4/19/2006 10:23	Low	24490.81	4.386229	0.1472173		
158437004	521637'9	0.9870328	149.3614	0.996283	4/19/2006 10:25	Low	53639.21	9.791595	0.2623931		
158438001	521637'10	0.9913704	149.8335	0.9903251	4/19/2006 10:27	Low	25219.65	4.521387	0.1844021		
158438002	521637'11	1.000688	144.22	0.996124	4/19/2006 10:29	Low	28284.46	5.089734	0.1428854		
158438003	521637'12	0.9913979	151.7966	0.9986246	4/19/2006 10:31	Low	26025.4	4.670806	8.60E-02		
158438004	521637'13	0.9869763	183.7544	0.9691334	4/19/2006 10:33	Low	17226.71	3.039151	0.1786634		
158438005	521637'14	0.993068	225.6618	0.9724522	4/19/2006 10:35	Low	25613.02	4.594334	0.2100728		
1201073174	521637'15	0.9900799	312.1344	0.9892274	4/19/2006 10:37	Low	728.8437	-2.03E-02	-4.63E-04		
1201073175	521637'16	0.9936023	148.5711	0.9934931	4/19/2006 10:39	Low	27978	5.032904	0.1725128		
1201073176	521637'17	1.015951	146.188	0.9889579	4/19/2006 10:43	High	1003.69	15.19803	0.8081281		
1201073177	521637'18	1.009287	292.8112	0.9985875	4/19/2006 10:46	High	1061.044	16.07093	0.5188541		
1201073178	521637'19	0.9904416	305.5775	0.9997729	4/19/2006 10:48	Low	10101.03	1.717743	2.01E-02		
2	CChkStd	0.9925501	298.7238	0.9998536	4/19/2006 10:50	Low	10496.49	1.791078	2.07E-02	2	90%
5	CChkStd	0.9982696	290.7059	0.9998528	4/19/2006 10:54	Low	27489.66	4.942344	5.73E-02	5	99%
50	CChkStd	1.001619	304.9433	0.9993668	4/19/2006 10:56	High	3301.338	50.1918	1.593677	50	100%
250	CChkStd	0.9966449	300.1391	0.999854	4/19/2006 10:58	High	16400.49	250.3239	7.875672	250	100%
158269001	521637'1	0.9868305	153.5851	0.9943186	4/19/2006 11:39	Low	30345.37	5.471916	0.1715336		
158269002	521637'2	0.9656691	152.1669	0.9991096	4/19/2006 11:41	Low	35390.99	6.407591	0.1040891		
158269003	521637'3	0.9621575	154.0736	0.9983983	4/19/2006 11:43	Low	31791.73	5.740133	0.1098937		
158269004	521637'4	0.9632051	149.8885	0.9975623	4/19/2006 11:45	Low	30907.78	5.57621	0.1261546		
158270001	521637'5	0.9711846	158.43	0.9931245	4/19/2006 11:47	Low	22828.64	4.077991	0.1353255		
158270002	521637'6	0.973178	162.3149	0.993305	4/19/2006 11:50	Low	28089.76	5.053627	0.1622427		
158437001	521637'7	0.9833986	172.3907	0.9854	4/19/2006 11:52	Low	20826.23	3.706658	0.1610164		
158437002	521637'8	0.9877269	150.9297	0.9963481	4/19/2006 11:54	Low	26912.91	4.835389	0.1275451		
158437003	521637'9	0.9914905	162.6	0.992139	4/19/2006 11:56	Low	24287.18	4.348466	0.1497161		
158437004	521637'10	1.005836	145.9376	0.9939824	4/19/2006 12:00	High	1017.159	15.40178	0.6865477		
158438001	521637'11	0.9936714	149.1253	0.9889911	4/19/2006 12:01	Low	24942.62	4.470014	0.1945381		
158438002	521637'12	1.006081	143.1666	0.9952648	4/19/2006 12:05	High	780.3599	11.79672	0.5009188		
158438003	521637'13	0.9918972	152.5361	0.9974464	4/19/2006 12:06	Low	25946.24	4.656128	0.1057968		
158438004	521637'14	0.9851436	185.4472	0.9649491	4/19/2006 12:08	Low	16692.4	2.940067	0.1825326		
158438005	521637'15	0.9944347	145.9422	0.997261	4/19/2006 12:11	Low	26836.61	4.82124	0.1164142		
1201073175	521637'16	0.9946537	148.6045	0.9948929	4/19/2006 12:13	Low	64918.8	11.88332	0.3659206		
1201073176	521637'17	1.008086	145.4348	0.9910215	4/19/2006 12:17	High	1289.896	19.55413	0.9767898		
2	CChkStd	0.9989305	293.2501	0.9997929	4/19/2006 12:18	Low	11052.63	1.894212	2.21E-02	2	95%
5	CChkStd	0.9962268	298.5897	0.9998721	4/19/2006 12:22	Low	27811.13	5.001958	5.77E-02	5	100%
50	CChkStd	0.9998017	319.0769	0.9995897	4/19/2006 12:24	High	3358.041	51.05692	1.613235	50	102%
250	CChkStd	0.9990258	312.6147	0.9999397	4/19/2006 12:26	High	16238.22	247.8379	7.783497	250	99%
2	CChkStd	0.9298021	323.0347	0.9998975	4/20/2006 14:26	Low	15395.69	2.185819	2.48E-02	2	109%
5	CChkStd	0.9368954	333.9677	0.9998398	4/20/2006 14:31	Low	38753.77	5.403488	6.17E-02	5	108%
50	CChkStd	0.9374557	327.5624	0.9994547	4/20/2006 14:32	High	6300.261	49.40655	1.567117	50	99%
250	CChkStd	0.9348087	322.7957	0.9998881	4/20/2006 14:35	High	34320.84	273.675	8.62856	250	109%
158437004	521637	0.9239733	177.459	0.9998775	4/20/2006 15:03	Low	48143.04	6.696896	7.86E-02		
158438001	521637	0.9235593	168.7448	0.9992825	4/20/2006 15:06	Low	27306	3.826512	0.0543412		

158438002	521637	0.9273942	177.7031	0.9995724	4/20/2006 15:08	Low	26756.08	3.750758	0.0484198		
158438005	521637	0.9311544	180.5077	0.9997067	4/20/2006 15:11	Low	23974.62	3.367601	4.17E-02		
1201073175	521637	0.9340066	178.3609	0.999713	4/20/2006 15:13	Low	28723.49	4.021776	4.98E-02		
1201073176	521637	0.9342846	169.4966	0.9987264	4/20/2006 15:15	Low	99722.36	13.80215	0.2222143		
2	CChkStd	0.9280117	321.3094	0.9996265	4/20/2006 15:18	Low	15407.13	2.187395	2.56E-02	2	109%
5	CChkStd	0.9386966	333.2115	0.9999149	4/20/2006 15:22	Low	38698.71	5.395902	6.11E-02	5	108%
50	CChkStd	0.9482937	327.9472	0.9994354	4/20/2006 15:23	High	6803.558	53.33803	1.692242	50	107%
250	CChkStd	0.9393737	333.9432	0.9999226	4/20/2006 15:26	High	33464.57	266.651	8.402281	250	107%
2	CChkStd	0.977299	317.4226	0.9998281	4/20/2006 16:36	Low	15173.23	2.112619	2.31E-02	2	106%
5	CChkStd	0.9846466	339.9385	0.9999489	4/20/2006 16:39	Low	36037.84	4.86291	5.24E-02	5	97%
50	CChkStd	1.004076	323.4604	0.9992822	4/20/2006 16:41	High	5843.935	45.60827	1.429597	50	91%
250	CChkStd	0.9997197	318.5651	0.9999002	4/20/2006 16:47	High	28654.95	225.0568	6.990772	250	90%
158437004	521637	0.9846579	181.0665	0.9998722	4/20/2006 16:54	Low	42953.87	5.774553	0.064913		
158438001	521637	0.9873068	170.7912	0.9996775	4/20/2006 16:56	Low	24561.12	3.350094	4.07E-02		
158438002	521637	0.9895955	177.224	0.9997618	4/20/2006 16:59	Low	24070.27	3.285392	3.85E-02		
158438005	521637	0.9935957	180.9698	0.9997128	4/20/2006 17:01	Low	22926.21	3.134587	3.72E-02		
1210173175	521637	0.988754	171.9204	0.9996576	4/20/2006 17:03	Low	26187.88	3.564527	4.36E-02		
1210173176	521638	0.9821866	161.5261	0.9995993	4/20/2006 17:06	Low	95773.55	12.73703	0.1615019		
2	CChkStd	0.9714403	319.4821	0.9997946	4/20/2006 17:08	Low	14995.8	2.089231	0.0229534	2	104%
5	CChkStd	0.9778836	332.5217	0.9998664	4/20/2006 17:11	Low	36592.72	4.936051	5.37E-02	5	99%
50	CChkStd	0.9919038	326.8352	0.9995726	4/20/2006 17:13	High	6363.138	49.67219	1.550157	50	99%
250	CChkStd	0.9894531	320.705	0.9999521	4/20/2006 17:15	High	31737.35	249.4475	7.742156	250	100%

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Laboratory: ANALYTE: Uranium ANALYST: Salina

Sample Identification

Sample ID	Proc ID	Sample Type	Description	Date / Time	SpA	SpG	Atomic Mass	Basis Sample	Customer ID
2.0	None	CChkStd	CChkStd	04/19/2006 09:20 AM	25000	1	238.0289	None	None
.0	None	CChkStd	CChkStd	04/19/2006 09:23 AM	25000	1	238.0289	None	None
50.0	None	CChkStd	CChkStd	04/19/2006 09:25 AM	25000	1	238.0289	None	None
250.0	None	CChkStd	CChkStd	04/19/2006 09:27 AM	25000	1	238.0289	None	None
1.0 ug/L	None	ConfTst	ConfTst	04/19/2006 08:00 AM	25000	1	238.0289	None	None
158269001	None	Sample	521637'	04/19/2006 10:06 AM	25000	1	238.0289	None	None
158269002	None	Sample	521637'1	04/19/2006 10:08 AM	25000	1	238.0289	None	None
158269003	None	Sample	521637'2	04/19/2006 10:10 AM	25000	1	238.0289	None	None
158269004	None	Sample	521637'3	04/19/2006 10:12 AM	25000	1	238.0289	None	None
158270001	None	Sample	521637'4	04/19/2006 10:14 AM	25000	1	238.0289	None	None
158270002	None	Sample	521637'5	04/19/2006 10:16 AM	25000	1	238.0289	None	None
158437001	None	Sample	521637'6	04/19/2006 10:18 AM	25000	1	238.0289	None	None
158437002	None	Sample	521637'7	04/19/2006 10:21 AM	25000	1	238.0289	None	None
158437003	None	Sample	521637'8	04/19/2006 10:23 AM	25000	1	238.0289	None	None
158437004	None	Sample	521637'9	04/19/2006 10:25 AM	25000	1	238.0289	None	None
158438001	None	Sample	521637'10	04/19/2006 10:27 AM	25000	1	238.0289	None	None
158438002	None	Sample	521637'11	04/19/2006 10:29 AM	25000	1	238.0289	None	None

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KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: Salina

Sample Identification

Sample ID	Proc ID	Sample Type	Description	Date / Time	SpA	SpG	Atomic Mass	Basis Sample	Customer ID
158438003	None	Sample	521637'12	04/19/2006 10:31 AM	25000	1	238.0289	None	None
158438004	None	Sample	521637'13	04/19/2006 10:33 AM	25000	1	238.0289	None	None
158438005	None	Sample	521637'14	04/19/2006 10:35 AM	25000	1	238.0289	None	None
1201073174	None	Sample	521637'15	04/19/2006 10:37 AM	25000	1	238.0289	None	None
1201073175	None	Sample	521637'16	04/19/2006 10:39 AM	25000	1	238.0289	None	None
1201073176	None	Sample	521637'17	04/19/2006 10:43 AM	25000	1	238.0289	None	None
1201073177	None	Sample	521637'18	04/19/2006 10:46 AM	25000	1	238.0289	None	None
1201073178	None	Sample	521637'19	04/19/2006 10:48 AM	25000	1	238.0289	None	None
2.0	None	CChkStd	CChkStd	04/19/2006 10:50 AM	25000	1	238.0289	None	None
5.	None	CChkStd	CChkStd	04/19/2006 10:54 AM	25000	1	238.0289	None	None
50.	None	CChkStd	CChkStd	04/19/2006 10:56 AM	25000	1	238.0289	None	None
250.	None	CChkStd	CChkStd	04/19/2006 10:58 AM	25000	1	238.0289	None	None
158269001	None	Sample	521637'1	04/19/2006 11:39 AM	25000	1	238.0289	None	None
158269002	None	Sample	521637'2	04/19/2006 11:41 AM	25000	1	238.0289	None	None
158269003	None	Sample	521637'3	04/19/2006 11:43 AM	25000	1	238.0289	None	None
158269004	None	Sample	521637'4	04/19/2006 11:45 AM	25000	1	238.0289	None	None
158270001	None	Sample	521637'5	04/19/2006 11:47 AM	25000	1	238.0289	None	None

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KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: Salina

Sample Identification

Sample ID	Proc ID	Sample Type	Description	Date / Time	SpA	SpG	Atomic Mass	Basis Sample	Customer ID
158270002	None	Sample	521637'6	04/19/2006 11:50 AM	25000	1	238.0289	None	None
158437001	None	Sample	521637'7	04/19/2006 11:52 AM	25000	1	238.0289	None	None
158437002	None	Sample	521637'8	04/19/2006 11:54 AM	25000	1	238.0289	None	None
158437003	None	Sample	521637'9	04/19/2006 11:56 AM	25000	1	238.0289	None	None
158437004	None	Sample	521637'10	04/19/2006 12:00 PM	25000	1	238.0289	None	None
158438001	None	Sample	521637'11	04/19/2006 12:01 PM	25000	1	238.0289	None	None
158438002	None	Sample	521637'12	04/19/2006 12:05 PM	25000	1	238.0289	None	None
158438003	None	Sample	521637'13	04/19/2006 12:06 PM	25000	1	238.0289	None	None
158438004	None	Sample	521637'14	04/19/2006 12:08 PM	25000	1	238.0289	None	None
158438005	None	Sample	521637'15	04/19/2006 12:11 PM	25000	1	238.0289	None	None
1201073175	None	Sample	521637'16	04/19/2006 12:13 PM	25000	1	238.0289	None	None
1201073176	None	Sample	521637'17	04/19/2006 12:17 PM	25000	1	238.0289	None	None
2.0	None	CChkStd	CChkStd	04/19/2006 12:18 PM	25000	1	238.0289	None	None
5.	None	CChkStd	CChkStd	04/19/2006 12:22 PM	25000	1	238.0289	None	None
50.	None	CChkStd	CChkStd	04/19/2006 12:24 PM	25000	1	238.0289	None	None
250.	None	CChkStd	CChkStd	04/19/2006 12:26 PM	25000	1	238.0289	None	None

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KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: sal01078

Sample Identification

Sample ID	Proc ID	Sample Type	Description	Date / Time	SpA	SpG	Atomic Mass	Basis Sample	Customer ID
2.0	None	CChkStd	CChkStd	04/20/2006 02:26 PM	2.5E+04	1	238.0289	None	None
5.0	None	CChkStd	CChkStd	04/20/2006 02:31 PM	2.5E+04	1	238.0289	None	None
50.0	None	CChkStd	CChkStd	04/20/2006 02:32 PM	2.5E+04	1	238.0289	None	None
250.0	None	CChkStd	CChkStd	04/20/2006 02:35 PM	2.5E+04	1	238.0289	None	None
158437004	None	Sample	521637	04/20/2006 03:03 PM	2.5E+04	1	238.0289	None	None
158438001	None	Sample	521637	04/20/2006 03:06 PM	2.5E+04	1	238.0289	None	None
158438002	None	Sample	521637	04/20/2006 03:08 PM	2.5E+04	1	238.0289	None	None
158438005	None	Sample	521637	04/20/2006 03:11 PM	2.5E+04	1	238.0289	None	None
1201073175	None	Sample	521637	04/20/2006 03:13 PM	2.5E+04	1	238.0289	None	None
1201073176	None	Sample	521637	04/20/2006 03:15 PM	2.5E+04	1	238.0289	None	None
2.0	None	CChkStd	CChkStd	04/20/2006 03:18 PM	2.5E+04	1	238.0289	None	None
5.0	None	CChkStd	CChkStd	04/20/2006 03:22 PM	2.5E+04	1	238.0289	None	None
50.0	None	CChkStd	CChkStd	04/20/2006 03:23 PM	2.5E+04	1	238.0289	None	None
250.0	None	CChkStd	CChkStd	04/20/2006 03:26 PM	2.5E+04	1	238.0289	None	None
2.0	None	CChkStd	CChkStd	04/20/2006 04:36 PM	2.5E+04	1	238.0289	None	None
5.0	None	CChkStd	CChkStd	04/20/2006 04:39 PM	2.5E+04	1	238.0289	None	None
50.0	None	CChkStd	CChkStd	04/20/2006 04:41 PM	2.5E+04	1	238.0289	None	None

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Laboratory: ANALYTE: Uranium ANALYST: sal01078

Sample Identification

Sample ID	Proc ID	Sample Type	Description	Date / Time	SpA	SpG	Atomic Mass	Basis Sample	Customer ID
250.0	None	CChkStd	CChkStd	04/20/2006 04:47 PM	2.5E+04	1	238.0289	None	None
158437004	None	Sample	521637	04/20/2006 04:54 PM	2.5E+04	1	238.0289	None	None
158438001	None	Sample	521637	04/20/2006 04:56 PM	2.5E+04	1	238.0289	None	None
158438002	None	Sample	521637	04/20/2006 04:59 PM	2.5E+04	1	238.0289	None	None
158438005	None	Sample	521637	04/20/2006 05:01 PM	2.5E+04	1	238.0289	None	None
1210173175	None	Sample	521637	04/20/2006 05:03 PM	2.5E+04	1	238.0289	None	None
1210173176	None	Sample	521638	04/20/2006 05:06 PM	2.5E+04	1	238.0289	None	None
2.0	None	CChkStd	CChkStd	04/20/2006 05:08 PM	2.5E+04	1	238.0289	None	None
5.0	None	CChkStd	CChkStd	04/20/2006 05:11 PM	2.5E+04	1	238.0289	None	None
50.0	None	CChkStd	CChkStd	04/20/2006 05:13 PM	2.5E+04	1	238.0289	None	None
250.0	None	CChkStd	CChkStd	04/20/2006 05:15 PM	2.5E+04	1	238.0289	None	None

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KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: Salina

Analytical Results

Sample ID	Range	Time Gates	Sample Units	Analytical Result	Total Dilution	Sample Type	Final Result	Pulses	Calibration ID	Uncertainty
2.0	Low	5 -49	µg/l	1.971		CChkStd		1000	041906	.023
5.0	Low	5 -49	µg/l	5.126		CChkStd		1000	041906	.058
50.0	High	5 -49	µg/l	48.977		CChkStd		1000	~~Default~~ 041906 x0	1.547
250.0	High	5 -49	µg/l	253.604		CChkStd		1000	~~Default~~ 041906 042104	7.980
1.0 ug/L	Low	5 -49	µg/l	.000		ConfTst	.000	1000	041906	.000
158269001	Low	5 -49	µg/l	5.151	1	Sample	5.151	1000	041906	.169
158269002	Low	5 -49	µg/l	6.280	1	Sample	6.280	1000	041906	.107
158269003	Low	5 -49	µg/l	5.550	1	Sample	5.550	1000	041906	.097
158269004	Low	5 -49	µg/l	5.419	1	Sample	5.419	1000	041906	.109
158270001	Low	5 -49	µg/l	4.188	1	Sample	4.188	1000	041906	.137
158270002	Low	5 -49	µg/l	5.352	1	Sample	5.352	1000	041906	.168
158437001	Low	5 -49	µg/l	3.726	1	Sample	3.726	1000	041906	.157
158437002	Low	5 -49	µg/l	4.886	1	Sample	4.886	1000	041906	.131
158437003	Low	5 -49	µg/l	4.386	1	Sample	4.386	1000	041906	.147
158437004	Low	5 -49	µg/l	9.792	1	Sample	9.792	1000	041906	.262
158438001	Low	5 -49	µg/l	4.521	1	Sample	4.521	1000	041906	.184
158438002	Low	5 -49	µg/l	5.090	1	Sample	5.090	1000	041906	.143

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Laboratory: ANALYTE: Uranium ANALYST: Salina

Analytical Results

Sample ID	Range	Time Gates	Sample Units	Analytical Result	Total Dilution	Sample Type	Final Result	Pulses	Calibration ID	Uncertainty
158438003	Low	5 -49	µg/l	4.671	1	Sample	4.671	1000	041906	.086
158438004	Low	5 -49	µg/l	3.039	1	Sample	3.039	1000	041906	.179
158438005	Low	5 -49	µg/l	4.594	1	Sample	4.594	1000	041906	.210
1201073174	Low	5 -49	µg/l	-.020	1	Sample	-.020	1000	041906	.000
1201073175	Low	5 -49	µg/l	5.033	1	Sample	5.033	1000	041906	.173
1201073176	High	5 -49	µg/l	15.198	1	Sample	15.198	1000	041904 ~~Default~~	.808
1201073177	High	5 -49	µg/l	16.071	1	Sample	16.071	1000	041904 ~~Default~~ 4/20/06	.519
1201073178	Low	5 -49	µg/l	1.718	1	Sample	1.718	1000	041906	.020
2.0	Low	5 -49	µg/l	1.791		CChkStd		1000	041906	.021
5.	Low	5 -49	µg/l	4.942		CChkStd		1000	041906	.057
50.	High	5 -49	µg/l	50.192		CChkStd		1000	041904 ~~Default~~	1.594
250.	High	5 -49	µg/l	250.324		CChkStd		1000	041904 ~~Default~~ 4/20/06	7.876
158269001	Low	5 -49	µg/l	5.472	1	Sample	5.472	1000	041906	.172
158269002	Low	5 -49	µg/l	6.408	1	Sample	6.408	1000	041906	.104
158269003	Low	5 -49	µg/l	5.740	1	Sample	5.740	1000	041906	.110
158269004	Low	5 -49	µg/l	5.576	1	Sample	5.576	1000	041906	.126
158270001	Low	5 -49	µg/l	4.078	1	Sample	4.078	1000	041906	.135

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Laboratory: ANALYTE: Uranium ANALYST: Salina

Analytical Results

Sample ID	Range	Time Gates	Sample Units	Analytical Result	Total Dilution	Sample Type	Final Result	Pulses	Calibration ID	Uncertainty
158270002	Low	5 -49	µg/l	5.054	1	Sample	5.054	1000	041906	.162
158437001	Low	5 -49	µg/l	3.707	1	Sample	3.707	1000	041906	.161
158437002	Low	5 -49	µg/l	4.835	1	Sample	4.835	1000	041906	.128
158437003	Low	5 -49	µg/l	4.348	1	Sample	4.348	1000	041906	.150
158437004	High	5 -49	µg/l	15.402	1	Sample	15.402	1000	041906 ~~Default~~	.687
158438001	Low	5 -49	µg/l	4.470	1	Sample	4.470	1000	041906	.195
158438002	High	5 -49	µg/l	11.797	1	Sample	11.797	1000	041906 ~~Default~~	.501
158438003	Low	5 -49	µg/l	4.656	1	Sample	4.656	1000	041906	.106
158438004	Low	5 -49	µg/l	2.940	1	Sample	2.940	1000	041906	.183
158438005	Low	5 -49	µg/l	4.821	1	Sample	4.821	1000	041906	.116
1201073175	Low	5 -49	µg/l	11.883	1	Sample	11.883	1000	041906	.366
1201073176	High	5 -49	µg/l	19.554	1	Sample	19.554	1000	041906 ~~Default~~	.977
2.0	Low	5 -49	µg/l	1.894		CChkStd		1000	041906	.022
5.	Low	5 -49	µg/l	5.002		CChkStd		1000	041906	.058
50.	High	5 -49	µg/l	51.057		CChkStd		1000	041906 ~~Default~~	1.613
250.	High	5 -49	µg/l	247.838		CChkStd		1000	041906 ~~Default~~	7.783

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Laboratory:

ANALYTE: Uranium ANALYST: sal01078

Analytical Results

Sample ID	Range	Time Gates	Sample Units	Analytical Result	Total Dilution	Sample Type	Final Result	Pulses	Calibration ID	Uncertainty
2.0	Low	5 -39	µg/l	2.19E+00		CChkStd		1000	042006	2.48E-02
5.0	Low	5 -39	µg/l	5.40E+00		CChkStd		1000	042006	6.17E-02
50.0	High	5 -39	µg/l	4.94E+01		CChkStd		1000	042006	1.57E+00
250.0	High	5 -39	µg/l	2.74E+02		CChkStd		1000	042006	8.63E+00
158437004	Low	5 -39	µg/l	6.70E+00	1	Sample	6.70E+00	1000	042006	7.86E-02
158438001	Low	5 -39	µg/l	3.83E+00	1	Sample	3.83E+00	1000	042006	5.43E-02
158438002	Low	5 -39	µg/l	3.75E+00	1	Sample	3.75E+00	1000	042006	4.84E-02
158438005	Low	5 -39	µg/l	3.37E+00	1	Sample	3.37E+00	1000	042006	4.17E-02
1201073175	Low	5 -39	µg/l	4.02E+00	1	Sample	4.02E+00	1000	042006	4.98E-02
1201073176	Low	5 -39	µg/l	1.38E+01	1	Sample	1.38E+01	1000	042006	2.22E-01
2.0	Low	5 -39	µg/l	2.19E+00		CChkStd		1000	042006	2.56E-02
5.0	Low	5 -39	µg/l	5.40E+00		CChkStd		1000	042006	6.11E-02
50.0	High	5 -39	µg/l	5.33E+01		CChkStd		1000	042006	1.69E+00
250.0	High	5 -39	µg/l	2.67E+02		CChkStd		1000	042006	8.40E+00
2.0	Low	5 -39	µg/l	2.11E+00		CChkStd		1000	Default	2.31E-02
5.0	Low	5 -39	µg/l	4.86E+00		CChkStd		1000	Default	5.24E-02
50.0	High	5 -39	µg/l	4.56E+01		CChkStd		1000	Default	1.43E+00

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Laboratory: ANALYTE: Uranium ANALYST: sal01078

Analytical Results

Sample ID	Range	Time Gates	Sample Units	Analytical Result	Total Dilution	Sample Type	Final Result	Calibration Pulses	Calibration ID	Uncertainty
250.0	High	5 -39	µg/l	2.25E+02		CChkStd		1000	Default	6.99E+00
158437004	Low	5 -39	µg/l	5.77E+00	1	Sample	5.77E+00	1000	Default	6.49E-02
158438001	Low	5 -39	µg/l	3.35E+00	1	Sample	3.35E+00	1000	Default	4.07E-02
158438002	Low	5 -39	µg/l	3.29E+00	1	Sample	3.29E+00	1000	Default	3.85E-02
158438005	Low	5 -39	µg/l	3.13E+00	1	Sample	3.13E+00	1000	Default	3.72E-02
1210173175	Low	5 -39	µg/l	3.56E+00	1	Sample	3.56E+00	1000	Default	4.36E-02
1210173176	Low	5 -39	µg/l	1.27E+01	1	Sample	1.27E+01	1000	Default	1.62E-01
2.0	Low	5 -39	µg/l	2.09E+00		CChkStd		1000	Default	2.30E-02
5.0	Low	5 -39	µg/l	4.94E+00		CChkStd		1000	Default	5.37E-02
50.0	High	5 -39	µg/l	4.97E+01		CChkStd		1000	Default	1.55E+00
250.0	High	5 -39	µg/l	2.49E+02		CChkStd		1000	Default	7.74E+00

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KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: Salina

Quality Control

Sample ID	Basis Sample	Reference Lifetime	R^2 Intensity	Reference Ratio	Sample Lifetime	Sample Intercept	IDL / MDL	Recovery (%)	RPD (%)	AW Flags
2.0	None	317	.9998	.98634	306	11466	0E+00/ 0E+00	98.55		
5.0	None	316	1.0000	.98870	312	28481	0E+00/ 0E+00	102.52		
50.0	None	316	.9996	.99650	324	3222	0E+00/ 0E+00	97.95		
250.0	None	317	.9998	.99692	304	16615	0E+00/ 0E+00	101.44		
1.0 ug/L	None	325	.9995	1.01518	305	5791	0E+00/ 0E+00			
158269001	None	316	.9939	.98347	152	28615	0E+00/ 0E+00			
158269002	None	317	.9988	.96758	162	34702	0E+00/ 0E+00			
158269003	None	316	.9988	.96533	157	30769	0E+00/ 0E+00			
158269004	None	317	.9982	.96491	152	30058	0E+00/ 0E+00			
158270001	None	318	.9931	.97398	162	23422	0E+00/ 0E+00			
158270002	None	319	.9936	.97498	163	29697	0E+00/ 0E+00			
158437001	None	318	.9869	.98290	168	20929	0E+00/ 0E+00			
158437002	None	319	.9962	.98639	151	27184	0E+00/ 0E+00			
158437003	None	320	.9925	.98545	163	24491	0E+00/ 0E+00			
158437004	None	320	.9963	.98703	149	53639	0E+00/ 0E+00			A9
158438001	None	318	.9903	.99137	150	25220	0E+00/ 0E+00			A9
158438002	None	316	.9961	1.00069	144	28284	0E+00/ 0E+00			A9

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Laboratory: ANALYTE: Uranium ANALYST: Salina

Quality Control

Sample ID	Basis Sample	Reference Lifetime	R^2 Intensity	Reference Ratio	Sample Lifetime	Sample Intercept	IDL / MDL	Recovery (%)	RPD (%)	AW Flags
158438003	None	318	.9986	.99140	152	26025	0E+00/ 0E+00			
158438004	None	319	.9691	.98698	184	17227	0E+00/ 0E+00			
158438005	None	317	.9725	.99307	226	25613	0E+00/ 0E+00			
1201073174	None	317	.9892	.99008	312	729	0E+00/ 0E+00			
1201073175	None	316	.9935	.99360	149	27978	0E+00/ 0E+00			A9
1201073176	None	315	.9890	1.01595	146	1004	0E+00/ 0E+00			A9
1201073177	None	316	.9986	1.00929	293	1061	0E+00/ 0E+00			
1201073178	None	318	.9998	.99044	306	10101	0E+00/ 0E+00			
2.0	None	316	.9999	.99255	299	10496	0E+00/ 0E+00	89.55		
5.	None	317	.9999	.99827	291	27490	0E+00/ 0E+00	98.85		
50.	None	316	.9994	1.00162	305	3301	0E+00/ 0E+00	100.38		
250.	None	318	.9999	.99664	300	16400	0E+00/ 0E+00	100.13		
158269001	None	315	.9943	.98683	154	30345	0E+00/ 0E+00			
158269002	None	316	.9991	.96567	152	35391	0E+00/ 0E+00			
158269003	None	316	.9984	.96216	154	31792	0E+00/ 0E+00			
158269004	None	317	.9976	.96321	150	30908	0E+00/ 0E+00			A9
158270001	None	316	.9931	.97118	158	22829	0E+00/ 0E+00			

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KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: Salina

Quality Control

Sample ID	Basis Sample	Reference Lifetime	R^2 Intensity	Reference Ratio	Sample Lifetime	Sample Intercept	IDL / MDL	Recovery (%)	RPD (%)	AW Flags
158270002	None	317	.9933	.97318	162	28090	0E+00/ 0E+00			
158437001	None	317	.9854	.98340	172	20826	0E+00/ 0E+00			
158437002	None	316	.9963	.98773	151	26913	0E+00/ 0E+00			
158437003	None	317	.9921	.99149	163	24287	0E+00/ 0E+00			
158437004	None	319	.9940	1.00584	146	1017	0E+00/ 0E+00			A9
158438001	None	317	.9890	.99367	149	24943	0E+00/ 0E+00			A9
158438002	None	317	.9953	1.00608	143	780	0E+00/ 0E+00			A9
158438003	None	318	.9974	.99190	153	25946	0E+00/ 0E+00			
158438004	None	317	.9649	.98514	185	16692	0E+00/ 0E+00			
158438005	None	314	.9973	.99443	146	26837	0E+00/ 0E+00			A9
1201073175	None	315	.9949	.99465	149	64919	0E+00/ 0E+00			A9
1201073176	None	315	.9910	1.00809	145	1290	0E+00/ 0E+00			A9
2.0	None	314	.9998	.99893	293	11053	0E+00/ 0E+00	94.71		
5.	None	316	.9999	.99623	299	27811	0E+00/ 0E+00	100.04		
50.	None	315	.9996	.99980	319	3358	0E+00/ 0E+00	102.11		
250.	None	315	.9999	.99903	313	16238	0E+00/ 0E+00	99.14		

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KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: sal01078

Quality Control

Sample ID	Basis Sample	Reference Lifetime	R^2 Intensity	Reference Ratio	Sample Lifetime	Sample Intercept	IDL / MDL	Recovery (%)	RPD (%)	AW Flags
2.0	None	283	.9999	.92980	323	15396	0E+00/ 0E+00	109.29		
5.0	None	281	.9998	.93690	334	38754	0E+00/ 0E+00	108.07		
50.0	None	282	.9995	.93746	328	6300	0E+00/ 0E+00	98.81		
250.0	None	281	.9999	.93481	323	34321	0E+00/ 0E+00	109.47		
158437004	None	281	.9999	.92397	177	48143	0E+00/ 0E+00			
158438001	None	281	.9993	.92356	169	27306	0E+00/ 0E+00			
158438002	None	281	.9996	.92739	178	26756	0E+00/ 0E+00			
158438005	None	282	.9997	.93115	181	23975	0E+00/ 0E+00			
1201073175	None	281	.9997	.93401	178	28723	0E+00/ 0E+00			
1201073176	None	282	.9987	.93428	169	99722	0E+00/ 0E+00			A18
2.0	None	282	.9996	.92801	321	15407	0E+00/ 0E+00	109.37		
5.0	None	282	.9999	.93870	333	38699	0E+00/ 0E+00	107.92		
50.0	None	281	.9994	.94829	328	6804	0E+00/ 0E+00	106.68		
250.0	None	282	.9999	.93937	334	33465	0E+00/ 0E+00	106.66		
2.0	None	280	.9998	.97730	317	15173	0E+00/ 0E+00	105.63		
5.0	None	281	.9999	.98465	340	36038	0E+00/ 0E+00	97.26		
50.0	None	281	.9993	1.00408	323	5844	0E+00/ 0E+00	91.22		

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Laboratory: ANALYTE: Uranium ANALYST: sal01078

Quality Control

Sample ID	Basis Sample	Reference Lifetime	R^2 Intensity	Reference Ratio	Sample Lifetime	Sample Intercept	IDL / MDL	Recovery (%)	RPD (%)	AW Flags
250.0	None	281	.9999	.99972	319	28655	0E+00/ 0E+00	90.02		
158437004	None	281	.9999	.98466	181	42954	0E+00/ 0E+00			
158438001	None	280	.9997	.98731	171	24561	0E+00/ 0E+00			
158438002	None	279	.9998	.98960	177	24070	0E+00/ 0E+00			
158438005	None	280	.9997	.99360	181	22926	0E+00/ 0E+00			
1210173175	None	280	.9997	.98875	172	26188	0E+00/ 0E+00			
1210173176	None	281	.9996	.98219	162	95774	0E+00/ 0E+00			A18
2.0	None	282	.9998	.97144	319	14996	0E+00/ 0E+00	104.46		
5.0	None	281	.9999	.97788	333	36593	0E+00/ 0E+00	98.72		
50.0	None	279	.9996	.99190	327	6363	0E+00/ 0E+00	99.34		
250.0	None	279	1.0000	.98945	321	31737	0E+00/ 0E+00	99.78		

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Laboratory: ANALYTE: Uranium ANALYST: Salina

Calibration Report Results

Low Calibration ID - 041906 High Calibration ID - Default

Batch ID - 2180

Date - 4/19/2006 9:08:50 AM

Calibration Report Results

Range	Used	Sample ID	Std Conc	Std ID	Intercept	Uncert	Percent Discrep	Time Reference Gates	Ratio	Lifetime	R^2	AW Flags
Low	+	BckGnd	0.000		342	18	.000	5-49	1.0000	358	.9556	
Low	+	1.0 ug/L	1.000	0914	6063	78	-3.101	5-49	.9896	305	.9995	
Low	+	3.0 ug/L	3.000	0872	17112	131	.594	5-49	.9850	305	.9999	
Low	+	5.0 ug/L	5.000	0898	27967	167	.618	5-49	.9884	312	.9999	
Low	+	10.0 ug/L	10.000	0840	54668	234	-.177	5-49	.9956	297	.9999	
High	+	BckGnd	0.000		4	3	.000	5-29	1.0000	346	.4817	
High	+	10.0 ug/L	10.000	0840	662	26	-.003	5-49	.9898	288	.9982	
High	+	250 ug/L	250.000	0876	16379	128	.000	5-49	.9919	312	.9998	
High	+	500 ug/L	500.000	0842	32645	181	.000	5-49	.9935	302	1.0000	

Date Printed - 4/21/2006 10:36:59 AM

KPAWin Detailed Calibration Report

Laboratory:

Calibration Details

Laboratory ID	KPA11AUTO1	Customer ID	None
Analyst	Salina	Procedure ID	None
Calibration Config ID	1000 Release	Calibration Date - 4/19/2006 9:08:50 AM	
Calibration Batch ID	2180		

	Low Range Details	High Range Details
User Calibration	True	None
Calibration Id	041906	Default
Minimum Number of Standards	3	3
Calibration Alarms		
Calibration R^2	0.9999431	1
Variance	8.27E+02	3.36E-10
Calibration Equation	Y= +5392.492X +838.109	Y= -0.001X^2 +65.713X +5.223

4/21/06

KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: sal01078

Calibration Report Results

Low Calibration ID - 042006 High Calibration ID - 042006

Batch ID - 1539

Date - 4/20/2006 8:46:28 AM

Calibration Report Results

Range	Used	Sample ID	Std Conc	Std ID	Intercept	Uncert	Percent Discrep	Time Reference Gates	Ratio	Lifetime	R ²	AW Flags
Low	+	BckGnd	0.000		649	25	.000	5-39	1.0000	306	.9748	
Low	+	1.0 ug/L	1.000	0836	7002	84	2.959	5-39	.9965	312	.9993	
Low	+	3.0 ug/L	3.000	0838	20871	144	-1.997	5-39	.9969	315	.9999	
Low	+	5.0 ug/L	5.000	0839	36047	190	.612	5-39	1.0026	338	.9999	
Low	+	10.0 ug/L	10.000	0840	72119	269	-.003	5-39	1.0069	303	1.0000	
High	+	BckGnd	0.000		5	3	.000	5-37	1.0000	334	.3543	
High	+	10.0 ug/L	10.000	0840	1232	35	.001	5-39	1.0189	308	.9972	
High	+	250 ug/L	250.000	0856	31429	177	.000	5-39	1.0209	329	.9999	
High	+	500 ug/L	500.000	0842	61174	247	.000	5-39	1.0219	314	1.0000	

4/21/06

Date Printed - 4/20/2006 5:38:14 PM

KPAWin Detailed Calibration Report

Laboratory:

Calibration Details

Laboratory ID	KPA11AUTO2	Customer ID	None
Analyst	sal01078	Procedure ID	None
Calibration Config ID	1001 Config	Calibration Date - 4/20/2006 8:46:28 AM	
Calibration Batch ID	1539		

	Low Range Details	High Range Details
User Calibration	True	True
Calibration Id	042006	042006
Minimum Number of Standards	3	3
Calibration Alarms		
Calibration R^2	0.9998794	1
Variance	3.18E+03	3.25E-09
Calibration Equation	Y= +7259.319X -471.868	Y= -0.014X^2 +129.455X -61.57

4/21/06

KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: sal01078

Calibration Report Results

Low Calibration ID - Default High Calibration ID - Default

Batch ID - 1650

Date - 4/20/2006 4:21:53 PM

Calibration Report Results

Range	Used	Sample ID	Std Conc	Std ID	Intercept	Uncert	Percent Discrep	Time Reference Gates	Ratio	Lifetime	R ²	AW Flags
Low	+	BckGnd	0.000		574	24	.000	5-39	1.0000	325	.9701	
Low	+	1.0 ug/L	1.000	0836	7393	86	8.712	5-39	.9905	314	.9998	
Low	+	3.0 ug/L	3.000	0838	21525	147	-1.672	5-39	.9925	312	.9998	
Low	+	5.0 ug/L	5.000	0839	36421	191	-1.732	5-39	.9901	335	.9999	
Low	+	10.0 ug/L	10.000	0840	75386	275	.496	5-39	.9900	301	.9999	
High	+	BckGnd	0.000		5	3	.000	5-28	1.0000	227	.6017	
High	+	10.0 ug/L	10.000	0840	1290	36	.004	5-39	1.0060	298	.9983	
High	+	250 ug/L	250.000	0856	31807	178	.000	5-39	.9994	319	.9999	
High	+	500 ug/L	500.000	0842	63151	251	.000	5-39	.9974	306	.9999	

4/21/06

KPAWin Detailed Calibration Report

Laboratory:

Calibration Details

Laboratory ID	KPA11AUTO2	Customer ID	None
Analyst	sal01078	Procedure ID	None
Calibration Config ID	1001 Config	Calibration Date - 4/20/2006 4:21:53 PM	
Calibration Batch ID	1539		

	Low Range Details	High Range Details
User Calibration	None	None
Calibration Id	Default	Default
Minimum Number of Standards	3	3
Calibration Alarms		
Calibration R^2	0.9995518	1
Variance	1.29E+04	2.69E-09
Calibration Equation	Y= +7586.331X -853.799	Y= -0.004X^2 +128.101X +9.047

4/21/06

METHOD CALIBRATION DATA

General Engineering Laboratories
2040 Savage Road, Charleston, SC 29414
(843)556-8171

Gas Flow Proportional Counter Calibration Package

Method: Pb-210

	YES	NO	Comments
1) Is all calibration standard information enclosed for:			
primary standard certificate?	✓		
secondard standard(s) documentation?	✓		
standard preparation information?	✓		
standard < 1 Year old or verified?	✓		
2) Are the detector graphs included?			
beta absorption curves?	✓		
beta plateau?	✓		
3) Is the raw count data included for:			
the plateau generation?	✓		
the absorption curve generation?	✓		
the calibration verification?	✓		
the crosstalk calculations?	✓		
4) Are the calibration verification calculations included?	✓		
are verification recoveries 100% +/- 25%	✓		

Prepared By: _____ Date: 7/29/05

Reviewed By: _____ Date: 7/30/05

Effective Date: 7/29/05

Q3576

DEUTSCHER KALIBRIERDIENST DKD

Kalibrierlaboratorium für Meßgrößen der Radioaktivität
Calibration laboratory for measurements of radioactivity

AKKREDITIERT DURCH DIE
PHYSIKALISCH-TECHNISCHE BUNDESANSTALT (PTB)

AEA Technology QSA GmbH
Postfach 58 42 Gieselweg 1
D-38049 Braunschweig D-38110 Braunschweig
Tel. +49 (0) 5307 932-0
Fax +49 (0) 5307 932-194

Source no. FX 248

08640
DKD-K-06501
01-01

Kalibrierzeichen
Calibration mark

Kalibrierschein
Calibration Certificate

Gegenstand *Object*	**Reference Solution**
Hersteller *Manufacturer*	**AEA Technology QSA GmbH**
Typ *Type*	**RBZB44**
Strahler-Nr. *Source number*	**FX 248**
Auftraggeber *Customer*	**AEA TECHNOLOGY QSA, INC. USA-BURLINGTON MA 01803**
Auftragsnummer *Order No.*	**CO 34622**
Anzahl der Seiten des Kalibrierscheines *Number of pages of the certificate*	**2**
Referenzdatum *Reference date*	**1 January 2001**

Dieser Kalibrierschein dokumentiert die Rückführung auf nationale Normale zur Darstellung der Einheiten in Übereinstimmung mit dem internationalen Einheitensystem (SI).

Der Deutsche Kalibrierdienst ist Unterzeichner des multilateralen Übereinkommens der European co-operation for Accreditation (EA) zur gegenseitigen Anerkennung der Kalibrierscheine.

Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.

This calibration certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI).

The Deutscher Kalibrierdienst is signatory to the multilateral agreement of the European co-operation for (EA) for the mutual recognition of calibration certificates.

The user is obliged to have the object recalibrated at appropriate intervals.

Stempel *Seal*	Datum *Date*	Leiter des Kalibrierlaboratoriums *Head of the calibration laboratory*	Stellvertreter *Deputy*	Bearbeiter *Person in charge*
Deutscher Kalibrierdienst DKD-K-06501	31 January 2001	Dr. Thieme	Schott	Linke / Schott / Schüler

7/29/05

08640
DKD-K-06501
01-01

Reference Solution

Solution no.	FX 248
Drawing	VZ-2058/1
Nuclide	Lead-210
Radioactive concentration	34.2 kBq/g
Reference date	1 January 20001 at 12.00 GMT
Mass of solution	(5.182 ± 0.001) g
Volume of solution	approx. 5 ml
Contamination test	Wipe test according to ISO 9978.
Date of wipe test	30 January 2001
Chemical composition	Solution in 1.2 M HNO3; Carrier: Pb(NO3)2, Bi(NO3)3; each 20 mg/l of the corresponding element.
Measuring method	The activity was determined by comparison with a reference solution by measurement with a Ge-detector with MCA.
Traceability	Additional to the direct traceability to the PTB through the DKD this product complies with the requirements for traceability to NIST specified in the American National Standard "Traceability of Radioactive Sources to the NIST and Associated Instrument Quality Control (ANSI N42.22-1995)". As a requirement of the ANSI N42.22-1995 AEA Technology QSA GmbH participates in the NEI/NIST Measurements Assurance Program of the Nuclear Power Industry.
Uncertainty	The relative uncertainty of the activity is 3 %. The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95 %. (Ref. NIST Technical Note 1297/"Guide to the Expression of Uncertainty in Measurement" ISO Guide, 1995)
Radioactive impurities	Related to Pb-210 (equal 100 %) the following radioactive impurities were detected: Ra-226: 0.003 %
Quality assurance system	The quality assurance system of AEA Technology QSA GmbH was certified by Lloyd's Register Quality Assurance (LRQA) according to ISO 9001, issue 1994. Isotrak products meet the requirements of 10CFR50 Appendix B in the USA.
Remark	

pm 7/29/04

Explanations for Certificates (Page 2 of Certificates)

Overall uncertainty

The reported uncertainty is based on standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95 %. (ISO Guide, 1995)

Traceability

This certificate documents the traceability of measurement results to national standards, standard measuring equipment and methods for the realisation of physical units of measurement according to the International System of Units (SI).
Traceability is defined as 'the property of a result of a measurement whereby it can be related to appropriate standards, generally international or national standards, through an unbroken chain of comparisons'.

AEA Technology QSA GmbH has been accredited as DKD (Deutscher Kalibrierdienst) calibration laboratory by the Physikalisch-Technische Bundesanstalt (PTB) and is authorized to issue reference sources which are traceable to national standards held at the PTB in Germany.
Because of the European co-operation for Accreditation (EA) mutual recognition agreement the certificates are also accepted by all EA-members (e. g. NAMAS, UK).

This product complies with the requirements for traceability to NIST specified in the American National Standard "Traceability of Radioactive Sources to the NIST and Associated Instrument Quality Control (ANSI N42.22-1995)".
As a requirement for the ANSI N42.22-1995 AEA Technology QSA participates in the NEI/NIST Measurements Assurance Program of the Nuclear Power Industry.

Leakage and contamination tests

Stringent tests for leakage are an essential feature of radioactive sources production. They are based on ISO 9978. Some standard methods used for testing radiation sources are listed below.

Wipe test I

The source is wiped with a swab or tissue, moistened with ethanol or water, the activity removed is measured.
Limit: 185 Bq

Immersion test II

The source is immersed in a suitable liquid at 50 °C for at least 4 hours and the activity removed is measured.
Limit: 185 Bq

Bubble test III

The source is immersed in water or a suitable liquid and the pressure in the vessel reduced to 13 kPa (100 mm Hg). No bubbles must be observed.
(This test conforms to ISO 9978 except that for some sources, the 100 mm^3 free volume requirement is not met.)

Emanation test IV

The source is placed in a gas tight enclosure with activated carbon as absorber and is left there for at least 3 h. The source is considered leak tight when not more than 185 Bq Radon related to a collection time of 12 h can be measured afterwards.

ISO classification

The International Organization for Standardization (ISO) has proposed a system of classification of sealed radioactive sources based on safety requirements for typical uses (see ISO 2919). This system provides a manufacturer of sealed radioactive sources with a set of tests to evaluate the safety of his products. It also assists a user of such sealed sources to select types which suit the application he has in mind. The tests to which specimen sources are subjected are listed in the following table.

Classification of sealed source performance standard according to ISO 2919

	Class 1	2	3	4	5	6
Temperature	No test	- 40 °C (20 min) + 80 °C (1 h)	- 40 °C (20 min) + 180 °C (1 h)	- 40 °C (20 min) + 400 °C (1 h) and thermal shock 400 °C to 20 °C	- 40 °C (20 min) + 600 °C (1 h) and thermal shock 600 °C to 20 °C	- 40 °C (20 min) + 800 °C (1 h) and thermal shock 800 °C to 20 °C
External Perssure	No test	25 kPa absolute	25 kPa absolute to 2 MPa absolute	25 kPa absolute to 7 MPa absolute	25 kPa absolute to 70 MPa absolute	25 kPa absolute to 170 MPa absolute
Impact	No test	50 g from 1 m	200 g from 1 m	2 kg from 1 m	5 kg from 1 m	20 kg from 1 m
Vibration	No test	3 x 10 min 25 - 500 Hz at 5 g peak amplitude	3 x 10 min 25 - 50 Hz at 5 g peak amplitude and 50 - 90 Hz at 0.635 mm amplitude peak to peak and 90 - 500 Hz at 10 g peak amplitude	3 x 30 min 25 - 80 Hz at 1.5 mm amplitude peak to peak and 80 - 2000 Hz at 20 g peak amplitude		
Puncture	No test	1 g from 1 m	10 g from 1 m	50 g from 1 m	300 g from 1 m	1 kg from 1 m

Special applications

No test programme can cover all possible combinations of environments to which a source may be exposed.
Users should therefore consult our experts before using sources in potentially adverse environments.

IAEA Special Form

'Special Form' is a test specification for sealed sources given in the IAEA transport regulations (IAEA Safety Series No. 6, 1985, revised edition).
It is used in determining the maximum acceptable activities for various types of transport containers.

Quality assurance system

The quality assurance system of AEA Technology QSA GmbH was certified by Lloyd's Register Quality Assurance (LRQA) according to ISO 9001, issue 1994. Isotrak products meet the requirements of 10CFR50 Appendix B.

AEA TECHNOLOGY

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0356
Prepared By:	Angela Albee
Carrier Conc:	1.2M HNO3
Reference Date:	01/01/2001
Ampoule Mass (g):	5.182 g
Uncertainty:	+/- 3 %
LogBook No:	RC S 034 16b

A Solution Material Info	
Isotope:	Lead-210
Prepared By:	Angela Albee
Prep Date:	04/03/2001
Verification Date:	07/12/2005
Expiration Date:	07/12/2006
Primary Code:	0356-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.275 g
Density(g/mL):	1.0290

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (kBq/g)) * (conversion dpm to kBq) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (kBq/g)) * (conversion dpm to kBq) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(4.275 g) * (34.2 kBq/g) * (60000 dpm/kBq) / (100 mL) = 87723.0000 dpm/mL
(4.275 g) * (34.2 kBq/g) * (60000 dpm/kBq) / (1.0290 g/mL) / (100 mL) = 85250.5630 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

Verification for Pb-210 Standard 0356-A

A.Fehr	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff	Standard Mass. Used (mL)	Source DPM/mL
7/12/2005	0356-A N1	20294.0000	21.7000	20294.0000	2.66846554	0.1000	76051.19747
	0356-A N2	20276.6000	21.7000	20276.6000	2.66846554	0.1000	75985.99146
	0356-A N3	20079.7000	21.7000	20079.7000	2.66846554	0.1000	75248.11421
						Average =	75761.76771

Mean Value (Counting) =	75761.76771	dpm/g	**99.4402909**	**Pass**
Stdev =	446.03015	dpm/g	0.00588727	**Rule 3 (Pass/Fail)**
Certificate Value =	76188.2	dpm/g		
Lower Limit =	74869.70741	dpm/g		
Upper Limit =	76653.82801	dpm/g		
Rule 1 Pass/Fail	**Pass**			
Two sigma =	892.0603001			
10 % of Mean =	7576.176771			
Rule 2 (Pass/Fail)	**Pass**			

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three calibration sources for source 0356-A by transferring portions of the standard to tared glass liquid scintillation vials. Ten mL of Ready Gel liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 1 mL of DI water and 10 mL of Ready Gel cocktail. The calibration vials and background source were dark adapted for two hours and counted on LSC Yellow (Wallac) using Protocol 31 for Pb-210 standard verification. The efficiency calibration which was used for verification calculations was performed on 7/12/05 using source ET491-A (Pb-210). Each verification source calculation was performed as follows:

Source dpm/g = (A - B)/(C)(D)
where:
A = Ver. source cpm,
B = BKG cpm,
C = System efficiency, (cpm/dpm), and
D = mass used for standard verification.

Angela L. Johnson 7/29/05

PROTOCOL : 31 Pb-210 Verification
DATE : 2005/07/12
TIME : 05:29
ID : P31AS005

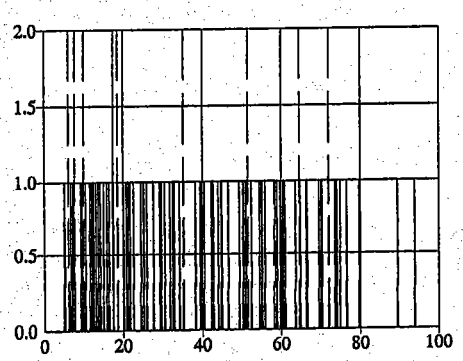
Wallac 1414 WinSpectral v1.40 S/N 4140127
Counting mode : CPM
Isotope(s) : Pb210
Pb210 = 5- 520,21.00 y
Protocol name : Pb-210 Verification
Counting time : 300
Repeats : 1
Cycles : 1
Replicates : 1
2 sigma % : 0.01
Minimum cpm : 0.00 Checking time: 10
Advanced modes : Chemilum,PSA
PSA level : 35
Output to Display :
POS,CTIME,DATE,TIME,RACKPOS,CPMw1,CPM,SQPI,CPM1
Additions to Display : Spectrum,Header,Listing
Spectrum : Alpha,Beta
Window 1 : 685- 745 /Alpha
Window 2 : 1-1024 /Beta
Window 3 : 1-1024 /Beta
Window 4 : 1-1024 /Beta
Window 5 : 1-1024 /Beta
Window 6 : 1-1024 /Beta
FNCT1 = FNCT1 :
FNCT2 = FNCT2 :
FNCT3 = FNCT3 :
FNCT4 = FNCT4 :

Total count rate:
Pb210 72372.3 CPM

per 7/29/05
ASA 7/12/05

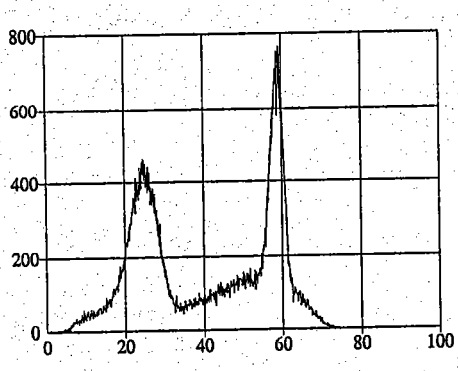
ASA 7/29/05

POS	CTIME	DATE	TIME	RACKPOS	CPM
1	300	7/12/2005	5:29 AM	1	20.20



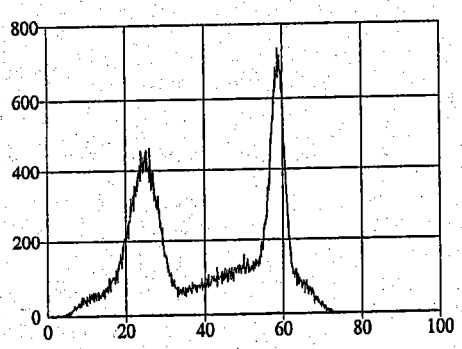
Bkg

2	300	7/12/2005	5:35 AM	2	22785.60



ET491-A

3	300	7/12/2005	5:41 AM	3	22178.60



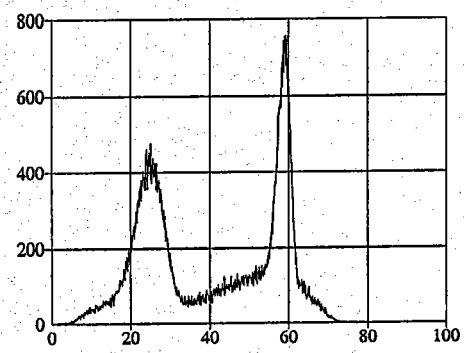
ET491-A

pk 7/29/05

QCF 7/12/05

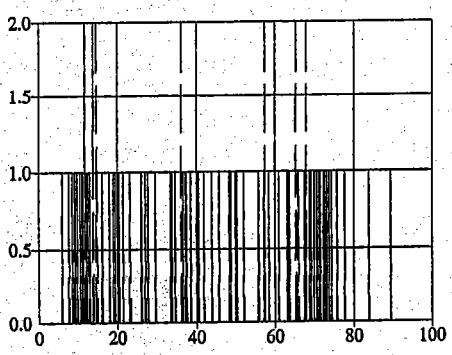
ADQ 7/29/05

POS	CTIME	DATE	TIME	RACKPOS	CPM
4	300	7/12/2005	5:46 AM	4	22065.70



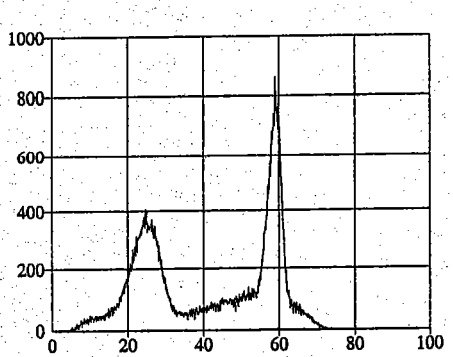
ET491-A

5	300	7/12/2005	5:52 AM	5	21.70



Bkg

6	300	7/12/2005	5:58 AM	6	20294.00



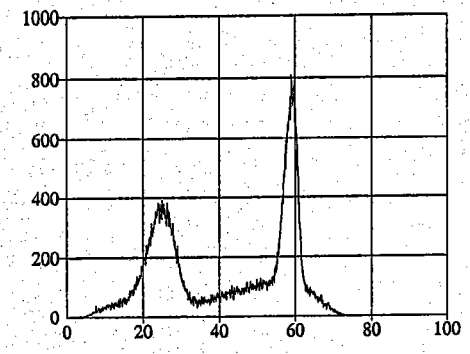
0356-A

7/12/05

ALF 7/12/05

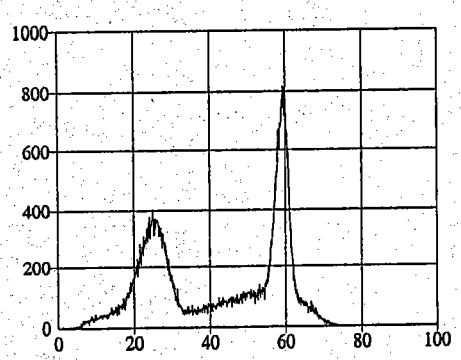
7/29/05

POS	CTIME	DATE	TIME	RACKPOS	CPM
7	300	7/12/2005	6:04 AM	7	20276.60



0356-A

8	300	7/12/2005	6:09 AM	8	20079.70



0356-A

pm 7/29/05

ALF 7/12/05

7/29/05

General Engineering Laboratories
Calibration Source Preparation Sheet

Applicable SOP Number: GL-RAD-A-018 | Isotope: Pb-210

Date Standards Prepared: 7/14/05 | Cocktail Type Used: NA

Standard ID: 0356-A | Matrix of Vial/Planchett: Lead chromate precipitate on Tuffryn filter

Amount Used (g or (ml)): 0.5

Standard Activity (DPM/g or (mL)): 87723 | Type of Scintillation Vial: N/A

Reference Date: 1/1/05 | Pipette ID Used: 2440913

Expiration Date: 7/12/06 | Balance ID Used: [illegible]

Residue/Carrier Agent: Lead Carrier 14.65 mg/mL | Quenching Agent: N/A

Separation Date / Time: 7/14/05 0800

	Standard Number	Quenching Vol (uL)/ Residue Volume(mL)	Initial Wt. (g)	Final Wt. (g)	Net Wt. (mg)		
	C1	0.1	0.0849	~~0.0850~~	~~0.6~~	0.0854	1.0
	C2	0.2	0.0851	~~0.0865~~	~~1.4~~	0.0875	2.4
	C3	0.3	0.0845	0.0880	3.5		
	C4	0.4	0.0849	0.0913	6.4		
	C5	0.5	0.0847	0.0926	7.9		
	C6	0.6	0.0874	0.0975	10.1		
	C7	0.7	0.0860	0.0950	9.0		
	C8	0.8	0.0879	0.1000	12.1		
	C9	0.9	0.0846	0.0966	12.0		
	C10	1.0	0.0852	0.1000	14.8		
	C11	1.1	0.0841	0.1010	16.9		
	C12	1.3	0.0865	~~0.1033~~ 7/13/05	18.8		
			0.0850	0.1053			
			0 7/13/05				

Prepared By: [signature] Date: 7/14/05

Reviewed By: [signature] Date: 7/14/05

Rev 1 RLM 9/10/97

Det.	Sample ID	Count Time	Alpha Counts	Beta Counts	Bkg CPM	Pb mg	Target mg	Rec (%)	Voltage	Count Date/Time	Dpm Added	CPM	Rec. Corr. CPM	Bi-210 Seperation	Bi-210 Ing. Days	Bi-210 Ing. Factor	Ing. Corr. CPM	Pb-210 Efficiency
Instrument 1 - A	1	2	84	22018	0.362	1	1.5	68.3%	1575	7/28/2005 7:55	38089.65	11008.64	16127.65	7/14/2005 8:00	13.997	0.8557	18848.12	0.4948
Instrument 1 - A	2	2	84	22854	0.362	2.4	2.9	81.9%	1575	7/28/2005 8:20	38089.65	11426.64	13950.02	7/14/2005 8:00	14.014	0.8560	16296.61	0.4278
Instrument 1 - A	3	2	102	20935	0.362	3.5	4.4	79.6%	1575	7/28/2005 8:05	38089.65	10467.14	13143.73	7/14/2005 8:00	14.004	0.8558	15358.20	0.4032
Instrument 1 - A	4	2	99	22720	0.362	6.4	5.9	109.2%	1575	7/28/2005 8:01	38089.65	11359.64	10401.17	7/14/2005 8:00	14.001	0.8558	12154.42	0.3191
Instrument 1 - A	5	2	95	22892	0.362	7.9	7.3	107.8%	1575	7/28/2005 10:09	38089.65	11445.64	10612.57	7/14/2005 8:00	14.090	0.8575	12375.96	0.3249
Instrument 1 - A	6	2	83	23217	0.362	10.1	8.8	114.9%	1575	7/28/2005 10:25	38089.65	11608.14	10102.53	7/14/2005 8:00	14.101	0.8577	11778.26	0.3092
Instrument 1 - A	7	2	63	19193	0.362	9	10.3	87.8%	1575	7/28/2005 10:20	38089.65	9596.14	10934.27	7/14/2005 8:00	14.098	0.8577	12748.81	0.3347
Instrument 1 - A	8	2	78	20620	0.362	12.1	11.7	103.2%	1575	7/28/2005 10:16	38089.65	10309.64	9985.86	7/14/2005 8:00	14.095	0.8576	11643.85	0.3057
Instrument 1 - A	9	2	65	18730	0.362	12	13.2	91.0%	1575	7/28/2005 9:35	38089.65	9364.64	10289.40	7/14/2005 8:00	14.066	0.8570	12005.70	0.3152
Instrument 1 - A	10	2	73	20335	0.362	14.8	14.7	101.0%	1575	7/28/2005 10:06	38089.65	10167.14	10064.09	7/14/2005 8:00	14.087	0.8575	11737.03	0.3081
Instrument 1 - A	11	2	81	19694	0.362	16.9	16.1	104.9%	1575	7/28/2005 10:02	38089.65	9846.64	9389.26	7/14/2005 8:00	14.085	0.8574	10950.66	0.2875
Instrument 1 - A	12	2	89	20801	0.362	18.8	19.0	98.7%	1575	7/28/2005 9:43	38089.65	10400.14	10535.67	7/14/2005 8:00	14.072	0.8572	12291.42	0.3227
Instrument 1 - B	1	2	56	21763	0.296	1	1.5	68.3%	1575	7/28/2005 8:01	38089.65	10881.20	15940.96	7/14/2005 8:00	14.001	0.8558	18627.99	0.4891
Instrument 1 - B	2	2	78	22474	0.296	2.4	2.9	81.9%	1575	7/28/2005 7:55	38089.65	11236.70	13718.14	7/14/2005 8:00	13.997	0.8557	16032.10	0.4209
Instrument 1 - B	3	2	73	20359	0.296	3.5	4.4	79.6%	1575	7/28/2005 8:20	38089.65	10179.20	12782.17	7/14/2005 8:00	14.014	0.8560	14932.28	0.3920
Instrument 1 - B	4	2	58	22111	0.296	6.4	5.9	109.2%	1575	7/28/2005 8:05	38089.65	11055.20	10122.42	7/14/2005 8:00	14.004	0.8558	11827.84	0.3105
Instrument 1 - B	5	2	71	23056	0.296	7.9	7.3	107.8%	1575	7/28/2005 10:16	38089.65	11527.70	10688.66	7/14/2005 8:00	14.095	0.8576	12463.31	0.3272
Instrument 1 - B	6	2	72	22905	0.296	10.1	8.8	114.9%	1575	7/28/2005 10:09	38089.65	11452.20	9966.82	7/14/2005 8:00	14.090	0.8575	11622.90	0.3051
Instrument 1 - B	7	2	62	18664	0.296	9	10.3	87.8%	1575	7/28/2005 10:25	38089.65	9331.70	10632.96	7/14/2005 8:00	14.101	0.8577	12396.64	0.3255
Instrument 1 - B	8	2	56	20619	0.296	12.1	11.7	103.2%	1575	7/28/2005 10:21	38089.65	10309.20	9985.44	7/14/2005 8:00	14.098	0.8577	11642.51	0.3057
Instrument 1 - B	9	2	62	18705	0.296	12	13.2	91.0%	1575	7/28/2005 9:43	38089.65	9352.20	10275.73	7/14/2005 8:00	14.072	0.8572	11988.15	0.3147
Instrument 1 - B	10	2	45	19770	0.296	14.8	14.7	101.0%	1575	7/28/2005 9:35	38089.65	9884.70	9784.52	7/14/2005 8:00	14.066	0.8570	11416.59	0.2997
Instrument 1 - B	11	2	42	19125	0.296	16.9	16.1	104.9%	1575	7/28/2005 10:06	38089.65	9562.20	9118.04	7/14/2005 8:00	14.088	0.8575	10633.70	0.2792
Instrument 1 - B	12	2	56	20230	0.296	18.8	19.0	98.7%	1575	7/28/2005 10:02	38089.65	10114.70	10246.52	7/14/2005 8:00	14.085	0.8574	11950.46	0.3137
Instrument 1 - C	1	2	132	22038	0.36	1	1.5	68.3%	1575	7/28/2005 8:06	38089.65	11018.64	16142.31	7/14/2005 8:00	14.004	0.8558	18861.93	0.4952
Instrument 1 - C	2	2	151	22700	0.36	2.4	2.9	81.9%	1575	7/28/2005 8:01	38089.65	11349.64	13856.02	7/14/2005 8:00	14.001	0.8558	16191.57	0.4251
Instrument 1 - C	3	2	161	20552	0.36	3.5	4.4	79.6%	1575	7/28/2005 7:55	38089.65	10275.64	12903.27	7/14/2005 8:00	13.997	0.8557	15079.77	0.3959
Instrument 1 - C	4	2	179	22690	0.36	6.4	5.9	109.2%	1575	7/28/2005 8:20	38089.65	11344.64	10387.44	7/14/2005 8:00	14.014	0.8560	12134.71	0.3186
Instrument 1 - C	5	2	149	23030	0.36	7.9	7.3	107.8%	1575	7/28/2005 10:21	38089.65	11514.64	10676.55	7/14/2005 8:00	14.098	0.8577	12448.29	0.3268
Instrument 1 - C	6	2	163	22975	0.36	10.1	8.8	114.9%	1575	7/28/2005 10:16	38089.65	11487.14	9997.22	7/14/2005 8:00	14.095	0.8576	11657.06	0.3060
Instrument 1 - C	7	2	137	19131	0.36	9	10.3	87.8%	1575	7/28/2005 10:09	38089.65	9565.14	10898.95	7/14/2005 8:00	14.090	0.8575	12709.87	0.3337
Instrument 1 - C	8	2	136	20712	0.36	12.1	11.7	103.2%	1575	7/28/2005 10:25	38089.65	10355.64	10030.42	7/14/2005 8:00	14.101	0.8577	11694.15	0.3070
Instrument 1 - C	9	2	132	19007	0.36	12	13.2	91.0%	1575	7/28/2005 10:02	38089.65	9503.14	10441.58	7/14/2005 8:00	14.085	0.8574	12177.92	0.3197
Instrument 1 - C	10	2	129	20055	0.36	14.8	14.7	101.0%	1575	7/28/2005 9:43	38089.65	10027.14	9925.51	7/14/2005 8:00	14.072	0.8572	11579.53	0.3040
Instrument 1 - C	11	2	110	19004	0.36	16.9	16.1	104.9%	1575	7/28/2005 9:35	38089.65	9501.64	9060.29	7/14/2005 8:00	14.066	0.8570	10571.55	0.2775
Instrument 1 - C	12	2	125	20586	0.36	18.8	19.0	98.7%	1575	7/28/2005 10:06	38089.65	10292.64	10426.77	7/14/2005 8:00	14.088	0.8575	12159.96	0.3192
Instrument 1 - D	1	2	314	21985	0.338	1	1.5	68.3%	1575	7/28/2005 8:20	38089.65	10992.16	16103.52	7/14/2005 8:00	14.014	0.8560	18812.29	0.4939
Instrument 1 - D	2	2	339	22577	0.338	2.4	2.9	81.9%	1575	7/28/2005 8:06	38089.65	11288.16	13780.96	7/14/2005 8:00	14.004	0.8558	16102.73	0.4228
Instrument 1 - D	3	2	302	20759	0.338	3.5	4.4	79.6%	1575	7/28/2005 8:01	38089.65	10379.16	13033.26	7/14/2005 8:00	14.001	0.8558	15230.12	0.3998
Instrument 1 - D	4	2	337	22777	0.338	6.4	5.9	109.2%	1575	7/28/2005 7:55	38089.65	11388.16	10427.29	7/14/2005 8:00	13.997	0.8557	12186.14	0.3199
Instrument 1 - D	5	2	299	23052	0.338	7.9	7.3	107.8%	1575	7/28/2005 10:25	38089.65	11525.66	10686.77	7/14/2005 8:00	14.101	0.8577	12459.35	0.3271
Instrument 1 - D	6	2	273	22954	0.338	10.1	8.8	114.9%	1575	7/28/2005 10:21	38089.65	11476.66	9988.10	7/14/2005 8:00	14.098	0.8577	11645.59	0.3057
Instrument 1 - D	7	2	234	19018	0.338	9	10.3	87.8%	1575	7/28/2005 10:16	38089.65	9508.66	10834.59	7/14/2005 8:00	14.095	0.8576	12633.40	0.3317
Instrument 1 - D	8	2	275	20545	0.338	12.1	11.7	103.2%	1575	7/28/2005 10:09	38089.65	10272.16	9949.57	7/14/2005 8:00	14.090	0.8575	11602.73	0.3046
Instrument 1 - D	9	2	253	18798	0.338	12	13.2	91.0%	1575	7/28/2005 10:06	38089.65	9398.66	10326.78	7/14/2005 8:00	14.088	0.8575	12043.34	0.3162
Instrument 1 - D	10	2	272	20117	0.338	14.8	14.7	101.0%	1575	7/28/2005 10:02	38089.65	10058.16	9956.22	7/14/2005 8:00	14.085	0.8574	11611.84	0.3048
Instrument 1 - D	11	2	259	19117	0.338	16.9	16.1	104.9%	1575	7/28/2005 9:43	38089.65	9558.16	9114.19	7/14/2005 8:00	14.072	0.8572	10633.00	0.2792
Instrument 1 - D	12	2	229	20856	0.338	18.8	19.0	98.7%	1575	7/28/2005 9:35	38089.65	10427.66	10563.55	7/14/2005 8:00	14.066	0.8570	12325.53	0.3236
Instrument 2 - A	1	2	225	21853	0.348	1	1.5	68.3%	1575	7/28/2005 8:42	38089.65	10926.15	16006.81	7/14/2005 8:00	14.029	0.8563	18692.72	0.4908
Instrument 2 - A	2	2	264	22781	0.348	2.4	2.9	81.9%	1575	7/28/2005 9:21	38089.65	11390.15	13905.48	7/14/2005 8:00	14.056	0.8568	16228.60	0.4261
Instrument 2 - A	3	2	246	20682	0.348	3.5	4.4	79.6%	1575	7/28/2005 8:52	38089.65	10340.65	12984.90	7/14/2005 8:00	14.037	0.8565	15161.12	0.3980
Instrument 2 - A	4	2	230	22878	0.348	6.4	5.9	109.2%	1575	7/28/2005 8:49	38089.65	11438.65	10473.52	7/14/2005 8:00	14.034	0.8564	12229.49	0.3211
Instrument 2 - A	5	2	266	23137	0.348	7.9	7.3	107.8%	1575	7/28/2005 7:55	38089.65	11568.15	10726.17	7/14/2005 8:00	13.997	0.8557	12535.41	0.3291
Instrument 2 - A	6	2	231	23217	0.348	10.1	8.8	114.9%	1575	7/28/2005 8:20	38089.65	11608.15	10102.54	7/14/2005 8:00	14.014	0.8560	11801.88	0.3098
Instrument 2 - A	7	2	172	19166	0.348	9	10.3	87.8%	1575	7/28/2005 8:06	38089.65	9582.65	10918.90	7/14/2005 8:00	14.004	0.8558	12758.47	0.3350
Instrument 2 - A	8	2	193	20672	0.348	12.1	11.7	103.2%	1575	7/28/2005 8:01	38089.65	10335.65	10011.06	7/14/2005 8:00	14.001	0.8558	11698.50	0.3071
Instrument 2 - A	9	2	201	19025	0.348	12	13.2	91.0%	1575	7/28/2005 10:09	38089.65	9512.15	10451.48	7/14/2005 8:00	14.090	0.8575	12188.03	0.3200
Instrument 2 - A	10	2	188	20237	0.348	14.8	14.7	101.0%	1575	7/28/2005 10:25	38089.65	10118.15	10015.60	7/14/2005 8:00	14.101	0.8577	11676.83	0.3066
Instrument 2 - A	11	2	194	19477	0.348	16.9	16.1	104.9%	1575	7/28/2005 10:21	38089.65	9738.15	9285.82	7/14/2005 8:00	14.098	0.8577	10826.74	0.2842
Instrument 2 - A	12	2	193	20724	0.348	18.8	19.0	98.7%	1575	7/28/2005 10:17	38089.65	10361.65	10496.68	7/14/2005 8:00	14.095	0.8576	12239.37	0.3213
Instrument 2 - B	1	2	9	22048	0.386	1	1.5	68.3%	1575	7/28/2005 8:49	38089.65	11023.61	16149.59	7/14/2005 8:00	14.034	0.8564	18857.20	0.4951
Instrument 2 - B	2	2	15	23045	0.386	2.4	2.9	81.9%	1575	7/28/2005 8:42	38089.65	11522.11	14066.58	7/14/2005 8:00	14.029	0.8563	16426.90	0.4313
Instrument 2 - B	3	2	16	20750	0.386	3.5	4.4	79.6%	1575	7/28/2005 9:21	38089.65	10374.61	13027.55	7/14/2005 8:00	14.056	0.8569	15203.99	0.3992
Instrument 2 - B	4	2	9	22958	0.386	6.4	5.9	109.2%	1575	7/28/2005 8:52	38089.65	11478.61	10510.11	7/14/2005 8:00	14.037	0.8565	12271.54	0.3222
Instrument 2 - B	5	2	12	23347	0.386	7.9	7.3	107.8%	1575	7/28/2005 8:01	38089.65	11673.11	10823.49	7/14/2005 8:00	14.001	0.8558	12647.86	0.3321
Instrument 2 - B	6	2	12	22888	0.386	10.1	8.8	114.9%	1575	7/28/2005 7:55	38089.65	11443.61	9959.34	7/14/2005 8:00	13.997	0.8557	11639.22	0.3056
Instrument 2 - B	7	2	12	19018	0.386	9	10.3	87.8%	1575	7/28/2005 8:20	38089.65	9508.61	10834.54	7/14/2005 8:00	14.014	0.8560	12656.99	0.3323
Instrument 2 - B	8	2	9	20774	0.386	12.1	11.7	103.2%	1575	7/28/2005 8:06	38089.65	10386.61	10060.42	7/14/2005 8:00	14.004	0.8558	11755.35	0.3086
Instrument 2 - B	9	2	12	18915	0.386	12	13.2	91.0%	1575	7/28/2005 10:17	38089.65	9457.11	10391.00	7/14/2005 8:00	14.095	0.8576	12116.13	0.3181
Instrument 2 - B	10	2	10	20157	0.386	14.8	14.7	101.0%	1575	7/28/2005 10:10	38089.65	10078.11	9975.97	7/14/2005 8:00	14.090	0.8575	11633.50	0.3054

Instrument 2 - B	11	2	14	19263	0.386	16.9	16.1	104.9%	1575	7/28/2005 10:25	38089.65	9631.11	9183.75	7/14/2005 8:00	14.101	0.8577	10706.99	0.2811
Instrument 2 - B	12	2	8	20483	0.386	18.8	19.0	98.7%	1575	7/28/2005 10:21	38089.65	10241.11	10374.58	7/14/2005 8:00	14.098	0.8577	12096.15	0.3176
Instrument 2 - C	1	2	280	21996	0.42	1	1.5	68.3%	1575	7/28/2005 8:52	38089.65	10997.58	16111.45	7/14/2005 8:00	14.037	0.8565	18811.64	0.4939
Instrument 2 - C	2	2	292	22508	0.42	2.4	2.9	81.9%	1575	7/28/2005 8:49	38089.65	11253.58	13736.75	7/14/2005 8:00	14.035	0.8564	16042.09	0.4212
Instrument 2 - C	3	2	244	20689	0.42	3.5	4.4	79.6%	1575	7/28/2005 8:42	38089.65	10344.08	12989.21	7/14/2005 8:00	14.029	0.8563	15168.74	0.3982
Instrument 2 - C	4	2	283	22518	0.42	6.4	5.9	109.2%	1575	7/28/2005 9:21	38089.65	11258.58	10308.64	7/14/2005 8:00	14.056	0.8569	12030.83	0.3159
Instrument 2 - C	5	2	264	23133	0.42	7.9	7.3	107.8%	1575	7/28/2005 8:06	38089.65	11566.08	10724.25	7/14/2005 8:00	14.004	0.8558	12530.99	0.3290
Instrument 2 - C	6	2	268	22568	0.42	10.1	8.8	114.9%	1575	7/28/2005 8:01	38089.65	11283.58	9820.07	7/14/2005 8:00	14.001	0.8558	11475.29	0.3013
Instrument 2 - C	7	2	240	18943	0.42	9	10.3	87.8%	1575	7/28/2005 7:55	38089.65	9471.08	10791.77	7/14/2005 8:00	13.997	0.8557	12612.03	0.3311
Instrument 2 - C	8	2	239	20584	0.42	12.1	11.7	103.2%	1575	7/28/2005 8:20	38089.65	10291.58	9968.37	7/14/2005 8:00	14.014	0.8560	11645.11	0.3057
Instrument 2 - C	9	2	222	18740	0.42	12	13.2	91.0%	1575	7/28/2005 10:21	38089.65	9369.58	10294.83	7/14/2005 8:00	14.098	0.8577	12003.14	0.3151
Instrument 2 - C	10	2	222	19943	0.42	14.8	14.7	101.0%	1575	7/28/2005 10:17	38089.65	9971.08	9870.02	7/14/2005 8:00	14.095	0.8576	11508.63	0.3021
Instrument 2 - C	11	2	221	19199	0.42	16.9	16.1	104.9%	1575	7/28/2005 10:10	38089.65	9599.08	9153.21	7/14/2005 8:00	14.090	0.8575	10674.02	0.2802
Instrument 2 - C	12	2	234	20523	0.42	18.8	19.0	98.7%	1575	7/28/2005 10:25	38089.65	10261.08	10394.80	7/14/2005 8:00	14.101	0.8577	12118.89	0.3182
Instrument 2 - D	1	2	280	22194	0.414	1	1.5	68.3%	1575	7/28/2005 9:21	38089.65	11096.59	16256.50	7/14/2005 8:00	14.056	0.8569	18972.33	0.4981
Instrument 2 - D	2	2	338	23021	0.414	2.4	2.9	81.9%	1575	7/28/2005 8:53	38089.65	11510.09	14051.90	7/14/2005 8:00	14.037	0.8565	16406.89	0.4307
Instrument 2 - D	3	2	288	20861	0.414	3.5	4.4	79.6%	1575	7/28/2005 8:49	38089.65	10430.09	13097.21	7/14/2005 8:00	14.035	0.8564	15292.99	0.4015
Instrument 2 - D	4	2	282	22714	0.414	6.4	5.9	109.2%	1575	7/28/2005 8:42	38089.65	11356.59	10398.37	7/14/2005 8:00	14.029	0.8563	12143.17	0.3188
Instrument 2 - D	5	2	254	23276	0.414	7.9	7.3	107.8%	1575	7/28/2005 8:20	38089.65	11637.59	10790.55	7/14/2005 8:00	14.014	0.8560	12605.57	0.3309
Instrument 2 - D	6	2	282	23097	0.414	10.1	8.8	114.9%	1575	7/28/2005 8:06	38089.65	11548.09	10050.26	7/14/2005 8:00	14.004	0.8558	11743.44	0.3083
Instrument 2 - D	7	2	232	19264	0.414	9	10.3	87.8%	1575	7/28/2005 8:02	38089.65	9631.59	10974.66	7/14/2005 8:00	14.001	0.8558	12824.47	0.3367
Instrument 2 - D	8	2	274	21105	0.414	12.1	11.7	103.2%	1575	7/28/2005 7:55	38089.65	10552.09	10220.70	7/14/2005 8:00	13.997	0.8557	11944.61	0.3136
Instrument 2 - D	9	2	221	19341	0.414	12	13.2	91.0%	1575	7/28/2005 10:25	38089.65	9670.09	10625.01	7/14/2005 8:00	14.101	0.8577	12387.25	0.3252
Instrument 2 - D	10	2	250	20334	0.414	14.8	14.7	101.0%	1575	7/28/2005 10:21	38089.65	10166.59	10063.55	7/14/2005 8:00	14.098	0.8577	11733.47	0.3080
Instrument 2 - D	11	2	210	19513	0.414	16.9	16.1	104.9%	1575	7/28/2005 10:17	38089.65	9756.09	9302.92	7/14/2005 8:00	14.095	0.8576	10847.36	0.2848
Instrument 2 - D	12	2	241	20672	0.414	18.8	19.0	98.7%	1575	7/28/2005 10:10	38089.65	10335.59	10470.28	7/14/2005 8:00	14.090	0.8575	12209.90	0.3206
Instrument 3 - A	1	2	151	21669	0.32	1	1.5	68.3%	1575	7/28/2005 9:34	38089.65	10834.18	15872.07	7/14/2005 8:00	14.066	0.8570	18519.74	0.4862
Instrument 3 - A	2	2	140	21967	0.32	2.4	2.9	81.9%	1575	7/28/2005 10:05	38089.65	10983.18	13408.63	7/14/2005 8:00	14.087	0.8575	15637.72	0.4106
Instrument 3 - A	3	2	151	20088	0.32	3.5	4.4	79.6%	1575	7/28/2005 10:01	38089.65	10043.68	12611.99	7/14/2005 8:00	14.084	0.8574	14709.56	0.3862
Instrument 3 - A	4	2	162	21796	0.32	6.4	5.9	109.2%	1575	7/28/2005 9:42	38089.65	10897.68	9978.19	7/14/2005 8:00	14.071	0.8571	11641.14	0.3056
Instrument 3 - A	5	2	165	22294	0.32	7.9	7.3	107.8%	1575	7/28/2005 8:42	38089.65	11146.68	10335.37	7/14/2005 8:00	14.029	0.8563	12069.58	0.3169
Instrument 3 - A	6	2	180	22353	0.32	10.1	8.8	114.9%	1575	7/28/2005 9:21	38089.65	11176.18	9726.60	7/14/2005 8:00	14.057	0.8569	11351.52	0.2980
Instrument 3 - A	7	2	95	18346	0.32	9	10.3	87.8%	1575	7/28/2005 8:53	38089.65	9172.68	10451.76	7/14/2005 8:00	14.037	0.8565	12203.38	0.3204
Instrument 3 - A	8	2	136	19841	0.32	12.1	11.7	103.2%	1575	7/28/2005 8:49	38089.65	9920.18	9608.64	7/14/2005 8:00	14.035	0.8564	11219.55	0.2946
Instrument 3 - A	9	2	104	18127	0.32	12	13.2	91.0%	1575	7/28/2005 7:56	38089.65	9063.18	9958.17	7/14/2005 8:00	13.997	0.8557	11637.78	0.3055
Instrument 3 - A	10	2	176	19341	0.32	14.8	14.7	101.0%	1575	7/28/2005 8:20	38089.65	9670.18	9572.17	7/14/2005 8:00	14.014	0.8560	11182.24	0.2936
Instrument 3 - A	11	2	120	18537	0.32	16.9	16.1	104.9%	1575	7/28/2005 8:06	38089.65	9268.18	8637.68	7/14/2005 8:00	14.005	0.8558	10326.55	0.2711
Instrument 3 - A	12	2	142	20233	0.32	18.8	19.0	98.7%	1575	7/28/2005 8:02	38089.65	10116.18	10248.01	7/14/2005 8:00	14.001	0.8558	11975.34	0.3144
Instrument 3 - B	1	2	236	21613	0.366	1	1.5	68.3%	1575	7/28/2005 9:42	38089.65	10806.13	15830.99	7/14/2005 8:00	14.071	0.8571	18469.34	0.4849
Instrument 3 - B	2	2	219	22011	0.366	2.4	2.9	81.9%	1575	7/28/2005 9:34	38089.65	11005.13	13435.43	7/14/2005 8:00	14.066	0.8570	15676.62	0.4116
Instrument 3 - B	3	2	220	20493	0.366	3.5	4.4	79.6%	1575	7/28/2005 10:05	38089.65	10246.13	12866.22	7/14/2005 8:00	14.087	0.8575	15005.11	0.3939
Instrument 3 - B	4	2	235	22109	0.366	6.4	5.9	109.2%	1575	7/28/2005 10:01	38089.65	11054.13	10121.44	7/14/2005 8:00	14.084	0.8574	11804.78	0.3099
Instrument 3 - B	5	2	244	22536	0.366	7.9	7.3	107.8%	1575	7/28/2005 8:49	38089.65	11267.63	10447.52	7/14/2005 8:00	14.035	0.8564	12199.07	0.3203
Instrument 3 - B	6	2	221	22658	0.366	10.1	8.8	114.9%	1575	7/28/2005 8:42	38089.65	11328.63	9859.28	7/14/2005 8:00	14.029	0.8563	11513.58	0.3023
Instrument 3 - B	7	2	207	18626	0.366	9	10.3	87.8%	1575	7/28/2005 9:21	38089.65	9312.63	10611.23	7/14/2005 8:00	14.057	0.8569	12383.92	0.3251
Instrument 3 - B	8	2	216	20102	0.366	12.1	11.7	103.2%	1575	7/28/2005 8:53	38089.65	10050.63	9734.99	7/14/2005 8:00	14.037	0.8565	11366.48	0.2984
Instrument 3 - B	9	2	188	18433	0.366	12	13.2	91.0%	1575	7/28/2005 8:02	38089.65	9216.13	10126.23	7/14/2005 8:00	14.002	0.8558	11833.00	0.3107
Instrument 3 - B	10	2	228	19517	0.366	14.8	14.7	101.0%	1575	7/28/2005 7:56	38089.65	9758.13	9659.23	7/14/2005 8:00	13.997	0.8557	11288.41	0.2964
Instrument 3 - B	11	2	189	19126	0.366	16.9	16.1	104.9%	1575	7/28/2005 8:20	38089.65	9562.63	9118.45	7/14/2005 8:00	14.014	0.8560	10652.20	0.2797
Instrument 3 - B	12	2	205	20505	0.366	18.8	19.0	98.7%	1575	7/28/2005 8:06	38089.65	10252.13	10385.74	7/14/2005 8:00	14.005	0.8558	12135.41	0.3186
Instrument 3 - C	1	2	322	21556	0.402	1	1.5	68.3%	1575	7/28/2005 10:01	38089.65	10777.60	15789.18	7/14/2005 8:00	14.084	0.8574	18415.11	0.4835
Instrument 3 - C	2	2	360	22173	0.402	2.4	2.9	81.9%	1575	7/28/2005 9:43	38089.65	11086.10	13534.28	7/14/2005 8:00	14.072	0.8572	15789.85	0.4145
Instrument 3 - C	3	2	329	20388	0.402	3.5	4.4	79.6%	1575	7/28/2005 9:34	38089.65	10193.60	12800.25	7/14/2005 8:00	14.066	0.8570	14935.46	0.3921
Instrument 3 - C	4	2	326	22168	0.402	6.4	5.9	109.2%	1575	7/28/2005 10:05	38089.65	11083.60	10148.42	7/14/2005 8:00	14.087	0.8575	11835.48	0.3107
Instrument 3 - C	5	2	338	23046	0.402	7.9	7.3	107.8%	1575	7/28/2005 8:53	38089.65	11522.60	10683.93	7/14/2005 8:00	14.037	0.8565	12474.43	0.3275
Instrument 3 - C	6	2	378	22957	0.402	10.1	8.8	114.9%	1575	7/28/2005 8:49	38089.65	11478.10	9989.35	7/14/2005 8:00	14.035	0.8564	11664.08	0.3062
Instrument 3 - C	7	2	283	18866	0.402	9	10.3	87.8%	1575	7/28/2005 8:42	38089.65	9432.60	10747.92	7/14/2005 8:00	14.030	0.8563	12551.32	0.3295
Instrument 3 - C	8	2	308	20233	0.402	12.1	11.7	103.2%	1575	7/28/2005 9:21	38089.65	10116.10	9798.40	7/14/2005 8:00	14.057	0.8569	11435.30	0.3002

INSTR_ID	SAMPLE_ID	CNT_TIME	A	B	TIME	USER2	BATCH_ID
Instrument 1 - A	1	2	84	22018	7/28/2005 7:55	1575	PbCal705
Instrument 1 - A	2	2	84	22854	7/28/2005 8:20	1575	PbCal705
Instrument 1 - A	3	2	102	20935	7/28/2005 8:05	1575	PbCal705
Instrument 1 - A	4	2	99	22720	7/28/2005 8:01	1575	PbCal705
Instrument 1 - A	5	2	95	22892	7/28/2005 10:09	1575	PbCal705
Instrument 1 - A	6	2	83	23217	7/28/2005 10:25	1575	PbCal705
Instrument 1 - A	7	2	63	19193	7/28/2005 10:20	1575	PbCal705
Instrument 1 - A	8	2	78	20620	7/28/2005 10:16	1575	PbCal705
Instrument 1 - A	9	2	65	18730	7/28/2005 9:35	1575	PbCal705
Instrument 1 - A	10	2	73	20335	7/28/2005 10:06	1575	PbCal705
Instrument 1 - A	11	2	81	19694	7/28/2005 10:02	1575	PbCal705
Instrument 1 - A	12	2	89	20801	7/28/2005 9:43	1575	PbCal705
Instrument 1 - B	1	2	56	21763	7/28/2005 8:01	1575	PbCal705
Instrument 1 - B	2	2	78	22474	7/28/2005 7:55	1575	PbCal705
Instrument 1 - B	3	2	73	20359	7/28/2005 8:20	1575	PbCal705
Instrument 1 - B	4	2	58	22111	7/28/2005 8:05	1575	PbCal705
Instrument 1 - B	5	2	71	23056	7/28/2005 10:16	1575	PbCal705
Instrument 1 - B	6	2	72	22905	7/28/2005 10:09	1575	PbCal705
Instrument 1 - B	7	2	62	18664	7/28/2005 10:25	1575	PbCal705
Instrument 1 - B	8	2	56	20619	7/28/2005 10:21	1575	PbCal705
Instrument 1 - B	9	2	62	18705	7/28/2005 9:43	1575	PbCal705
Instrument 1 - B	10	2	45	19770	7/28/2005 9:35	1575	PbCal705
Instrument 1 - B	11	2	42	19125	7/28/2005 10:06	1575	PbCal705
Instrument 1 - B	12	2	56	20230	7/28/2005 10:02	1575	PbCal705
Instrument 1 - C	1	2	132	22038	7/28/2005 8:06	1575	PbCal705
Instrument 1 - C	2	2	151	22700	7/28/2005 8:01	1575	PbCal705
Instrument 1 - C	3	2	161	20552	7/28/2005 7:55	1575	PbCal705
Instrument 1 - C	4	2	179	22690	7/28/2005 8:20	1575	PbCal705
Instrument 1 - C	5	2	149	23030	7/28/2005 10:21	1575	PbCal705
Instrument 1 - C	6	2	163	22975	7/28/2005 10:16	1575	PbCal705
Instrument 1 - C	7	2	137	19131	7/28/2005 10:09	1575	PbCal705
Instrument 1 - C	8	2	136	20712	7/28/2005 10:25	1575	PbCal705
Instrument 1 - C	9	2	132	19007	7/28/2005 10:02	1575	PbCal705
Instrument 1 - C	10	2	129	20055	7/28/2005 9:43	1575	PbCal705
Instrument 1 - C	11	2	110	19004	7/28/2005 9:35	1575	PbCal705
Instrument 1 - C	12	2	125	20586	7/28/2005 10:06	1575	PbCal705
Instrument 1 - D	1	2	314	21985	7/28/2005 8:20	1575	PbCal705
Instrument 1 - D	2	2	339	22577	7/28/2005 8:06	1575	PbCal705
Instrument 1 - D	3	2	302	20759	7/28/2005 8:01	1575	PbCal705
Instrument 1 - D	4	2	337	22777	7/28/2005 7:55	1575	PbCal705
Instrument 1 - D	5	2	299	23052	7/28/2005 10:25	1575	PbCal705
Instrument 1 - D	6	2	273	22954	7/28/2005 10:21	1575	PbCal705
Instrument 1 - D	7	2	234	19018	7/28/2005 10:16	1575	PbCal705
Instrument 1 - D	8	2	275	20545	7/28/2005 10:09	1575	PbCal705
Instrument 1 - D	9	2	253	18798	7/28/2005 10:06	1575	PbCal705
Instrument 1 - D	10	2	272	20117	7/28/2005 10:02	1575	PbCal705
Instrument 1 - D	11	2	259	19117	7/28/2005 9:43	1575	PbCal705
Instrument 1 - D	12	2	229	20856	7/28/2005 9:35	1575	PbCal705
Instrument 2 - A	1	2	225	21853	7/28/2005 8:42	1575	PbCal705
Instrument 2 - A	2	2	264	22781	7/28/2005 9:21	1575	PbCal705
Instrument 2 - A	3	2	246	20682	7/28/2005 8:52	1575	PbCal705

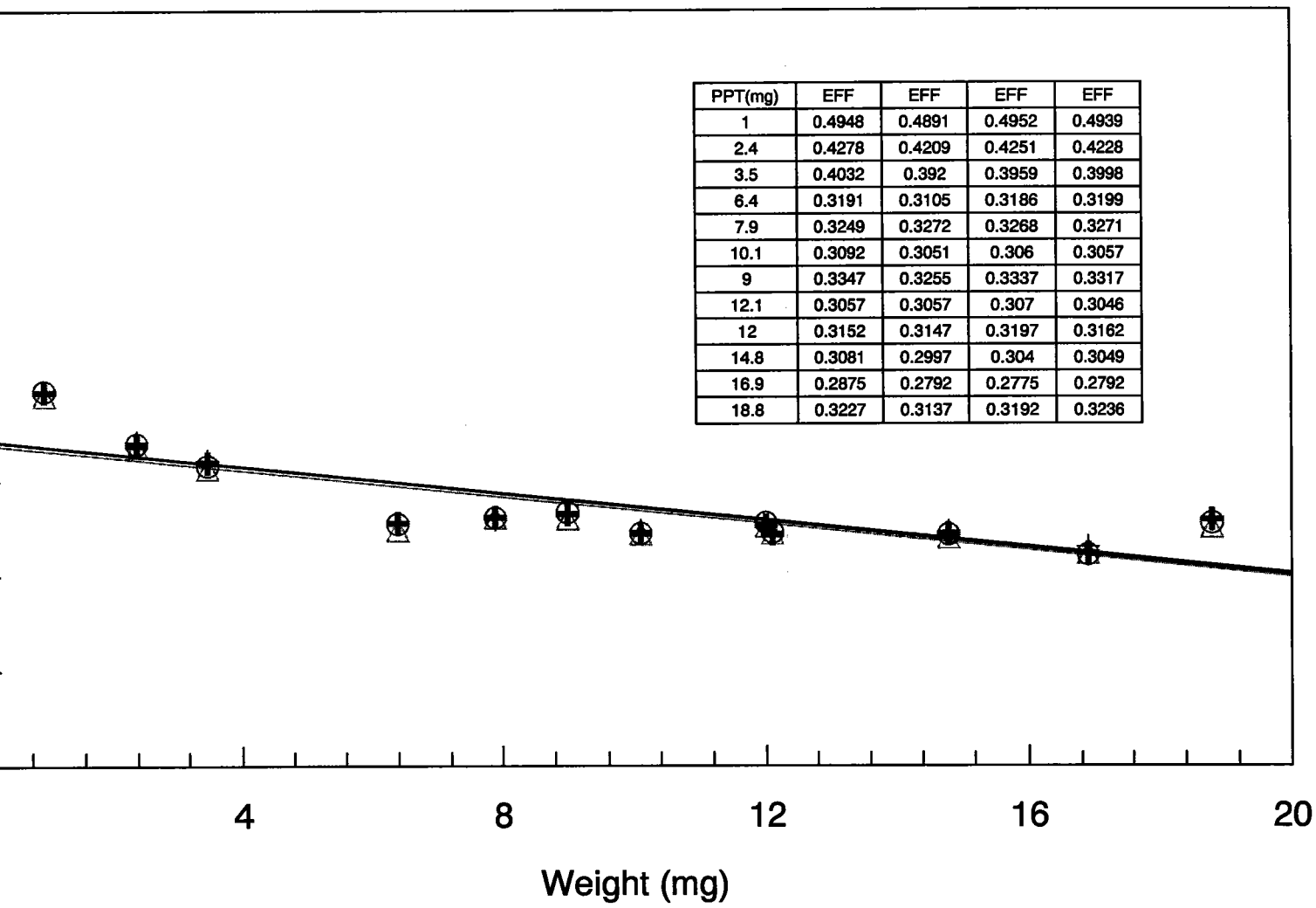
Instrument 2 - A	4	2	230	22878	7/28/2005 8:49	1575	PbCal705
Instrument 2 - A	5	2	266	23137	7/28/2005 7:55	1575	PbCal705
Instrument 2 - A	6	2	231	23217	7/28/2005 8:20	1575	PbCal705
Instrument 2 - A	7	2	172	19166	7/28/2005 8:06	1575	PbCal705
Instrument 2 - A	8	2	193	20672	7/28/2005 8:01	1575	PbCal705
Instrument 2 - A	9	2	201	19025	7/28/2005 10:09	1575	PbCal705
Instrument 2 - A	10	2	188	20237	7/28/2005 10:25	1575	PbCal705
Instrument 2 - A	11	2	194	19477	7/28/2005 10:21	1575	PbCal705
Instrument 2 - A	12	2	193	20724	7/28/2005 10:17	1575	PbCal705
Instrument 2 - B	1	2	9	22048	7/28/2005 8:49	1575	PbCal705
Instrument 2 - B	2	2	15	23045	7/28/2005 8:42	1575	PbCal705
Instrument 2 - B	3	2	16	20750	7/28/2005 9:21	1575	PbCal705
Instrument 2 - B	4	2	9	22958	7/28/2005 8:52	1575	PbCal705
Instrument 2 - B	5	2	12	23347	7/28/2005 8:01	1575	PbCal705
Instrument 2 - B	6	2	12	22888	7/28/2005 7:55	1575	PbCal705
Instrument 2 - B	7	2	12	19018	7/28/2005 8:20	1575	PbCal705
Instrument 2 - B	8	2	9	20774	7/28/2005 8:06	1575	PbCal705
Instrument 2 - B	9	2	12	18915	7/28/2005 10:17	1575	PbCal705
Instrument 2 - B	10	2	10	20157	7/28/2005 10:10	1575	PbCal705
Instrument 2 - B	11	2	14	19263	7/28/2005 10:25	1575	PbCal705
Instrument 2 - B	12	2	8	20483	7/28/2005 10:21	1575	PbCal705
Instrument 2 - C	1	2	280	21996	7/28/2005 8:52	1575	PbCal705
Instrument 2 - C	2	2	292	22508	7/28/2005 8:49	1575	PbCal705
Instrument 2 - C	3	2	244	20689	7/28/2005 8:42	1575	PbCal705
Instrument 2 - C	4	2	283	22518	7/28/2005 9:21	1575	PbCal705
Instrument 2 - C	5	2	264	23133	7/28/2005 8:06	1575	PbCal705
Instrument 2 - C	6	2	268	22568	7/28/2005 8:01	1575	PbCal705
Instrument 2 - C	7	2	240	18943	7/28/2005 7:55	1575	PbCal705
Instrument 2 - C	8	2	239	20584	7/28/2005 8:20	1575	PbCal705
Instrument 2 - C	9	2	222	18740	7/28/2005 10:21	1575	PbCal705
Instrument 2 - C	10	2	222	19943	7/28/2005 10:17	1575	PbCal705
Instrument 2 - C	11	2	221	19199	7/28/2005 10:10	1575	PbCal705
Instrument 2 - C	12	2	234	20523	7/28/2005 10:25	1575	PbCal705
Instrument 2 - D	1	2	280	22194	7/28/2005 9:21	1575	PbCal705
Instrument 2 - D	2	2	338	23021	7/28/2005 8:53	1575	PbCal705
Instrument 2 - D	3	2	288	20861	7/28/2005 8:49	1575	PbCal705
Instrument 2 - D	4	2	282	22714	7/28/2005 8:42	1575	PbCal705
Instrument 2 - D	5	2	254	23276	7/28/2005 8:20	1575	PbCal705
Instrument 2 - D	6	2	282	23097	7/28/2005 8:06	1575	PbCal705
Instrument 2 - D	7	2	232	19264	7/28/2005 8:02	1575	PbCal705
Instrument 2 - D	8	2	274	21105	7/28/2005 7:55	1575	PbCal705
Instrument 2 - D	9	2	221	19341	7/28/2005 10:25	1575	PbCal705
Instrument 2 - D	10	2	250	20334	7/28/2005 10:21	1575	PbCal705
Instrument 2 - D	11	2	210	19513	7/28/2005 10:17	1575	PbCal705
Instrument 2 - D	12	2	241	20672	7/28/2005 10:10	1575	PbCal705
Instrument 3 - A	1	2	151	21669	7/28/2005 9:34	1575	PbCal705
Instrument 3 - A	2	2	140	21967	7/28/2005 10:05	1575	PbCal705
Instrument 3 - A	3	2	151	20088	7/28/2005 10:01	1575	PbCal705
Instrument 3 - A	4	2	162	21796	7/28/2005 9:42	1575	PbCal705
Instrument 3 - A	5	2	165	22294	7/28/2005 8:42	1575	PbCal705
Instrument 3 - A	6	2	180	22353	7/28/2005 9:21	1575	PbCal705
Instrument 3 - A	7	2	95	18346	7/28/2005 8:53	1575	PbCal705

Instrument 3 - A	8	2	136	19841	7/28/2005 8:49	1575	PbCal705
Instrument 3 - A	9	2	104	18127	7/28/2005 7:56	1575	PbCal705
Instrument 3 - A	10	2	176	19341	7/28/2005 8:20	1575	PbCal705
Instrument 3 - A	11	2	120	18537	7/28/2005 8:06	1575	PbCal705
Instrument 3 - A	12	2	142	20233	7/28/2005 8:02	1575	PbCal705
Instrument 3 - B	1	2	236	21613	7/28/2005 9:42	1575	PbCal705
Instrument 3 - B	2	2	219	22011	7/28/2005 9:34	1575	PbCal705
Instrument 3 - B	3	2	220	20493	7/28/2005 10:05	1575	PbCal705
Instrument 3 - B	4	2	235	22109	7/28/2005 10:01	1575	PbCal705
Instrument 3 - B	5	2	244	22536	7/28/2005 8:49	1575	PbCal705
Instrument 3 - B	6	2	221	22658	7/28/2005 8:42	1575	PbCal705
Instrument 3 - B	7	2	207	18626	7/28/2005 9:21	1575	PbCal705
Instrument 3 - B	8	2	216	20102	7/28/2005 8:53	1575	PbCal705
Instrument 3 - B	9	2	188	18433	7/28/2005 8:02	1575	PbCal705
Instrument 3 - B	10	2	228	19517	7/28/2005 7:56	1575	PbCal705
Instrument 3 - B	11	2	189	19126	7/28/2005 8:20	1575	PbCal705
Instrument 3 - B	12	2	205	20505	7/28/2005 8:06	1575	PbCal705
Instrument 3 - C	1	2	322	21556	7/28/2005 10:01	1575	PbCal705
Instrument 3 - C	2	2	360	22173	7/28/2005 9:43	1575	PbCal705
Instrument 3 - C	3	2	329	20388	7/28/2005 9:34	1575	PbCal705
Instrument 3 - C	4	2	326	22168	7/28/2005 10:05	1575	PbCal705
Instrument 3 - C	5	2	338	23046	7/28/2005 8:53	1575	PbCal705
Instrument 3 - C	6	2	378	22957	7/28/2005 8:49	1575	PbCal705
Instrument 3 - C	7	2	283	18866	7/28/2005 8:42	1575	PbCal705
Instrument 3 - C	8	2	308	20233	7/28/2005 9:21	1575	PbCal705
Instrument 3 - C	9	2	291	18650	7/28/2005 8:06	1575	PbCal705
Instrument 3 - C	10	2	305	19515	7/28/2005 8:02	1575	PbCal705
Instrument 3 - C	11	2	290	19302	7/28/2005 7:56	1575	PbCal705
Instrument 3 - C	12	2	318	20119	7/28/2005 8:20	1575	PbCal705
Instrument 3 - D	1	2	244	21693	7/28/2005 10:05	1575	PbCal705
Instrument 3 - D	2	2	239	22623	7/28/2005 10:01	1575	PbCal705
Instrument 3 - D	3	2	241	20563	7/28/2005 9:43	1575	PbCal705
Instrument 3 - D	4	2	244	22484	7/28/2005 9:34	1575	PbCal705
Instrument 3 - D	5	2	258	23049	7/28/2005 9:21	1575	PbCal705
Instrument 3 - D	6	2	262	22650	7/28/2005 8:53	1575	PbCal705
Instrument 3 - D	7	2	196	19014	7/28/2005 8:50	1575	PbCal705
Instrument 3 - D	8	2	234	20041	7/28/2005 8:42	1575	PbCal705
Instrument 3 - D	9	2	213	18822	7/28/2005 8:20	1575	PbCal705
Instrument 3 - D	10	2	239	19800	7/28/2005 8:06	1575	PbCal705
Instrument 3 - D	11	2	221	18990	7/28/2005 8:02	1575	PbCal705
Instrument 3 - D	12	2	234	20049	7/28/2005 7:56	1575	PbCal705
Instrument 4 - A	1	2	179	22048	7/28/2005 10:09	1575	PbCal705
Instrument 4 - A	2	2	167	22217	7/28/2005 10:24	1575	PbCal705
Instrument 4 - A	3	2	149	20830	7/28/2005 10:20	1575	PbCal705
Instrument 4 - A	4	2	133	22551	7/28/2005 10:16	1575	PbCal705
Instrument 4 - A	5	2	137	23240	7/28/2005 9:34	1575	PbCal705
Instrument 4 - A	6	2	164	22718	7/28/2005 10:05	1575	PbCal705
Instrument 4 - A	7	2	130	19096	7/28/2005 10:01	1575	PbCal705
Instrument 4 - A	8	2	139	20375	7/28/2005 9:43	1575	PbCal705
Instrument 4 - A	9	2	126	18833	7/28/2005 8:42	1575	PbCal705
Instrument 4 - A	10	2	128	20217	7/28/2005 9:21	1575	PbCal705
Instrument 4 - A	11	2	149	19209	7/28/2005 8:53	1575	PbCal705

Instrument 4 - A	12	2	141	20634	7/28/2005 8:50	1575	PbCal705
Instrument 4 - B	1	2	19	22035	7/28/2005 10:16	1575	PbCal705
Instrument 4 - B	2	2	17	22750	7/28/2005 10:09	1575	PbCal705
Instrument 4 - B	3	2	21	21081	7/28/2005 10:24	1575	PbCal705
Instrument 4 - B	4	2	19	22859	7/28/2005 10:20	1575	PbCal705
Instrument 4 - B	5	2	19	23403	7/28/2005 9:43	1575	PbCal705
Instrument 4 - B	6	2	24	23177	7/28/2005 9:34	1575	PbCal705
Instrument 4 - B	7	2	13	19259	7/28/2005 10:05	1575	PbCal705
Instrument 4 - B	8	2	16	20883	7/28/2005 10:01	1575	PbCal705
Instrument 4 - B	9	2	12	19153	7/28/2005 8:50	1575	PbCal705
Instrument 4 - B	10	2	15	20262	7/28/2005 8:42	1575	PbCal705
Instrument 4 - B	11	2	23	19727	7/28/2005 9:21	1575	PbCal705
Instrument 4 - B	12	2	23	20878	7/28/2005 8:53	1575	PbCal705
Instrument 4 - C	1	2	249	22116	7/28/2005 10:20	1575	PbCal705
Instrument 4 - C	2	2	278	22252	7/28/2005 10:16	1575	PbCal705
Instrument 4 - C	3	2	254	20864	7/28/2005 10:09	1575	PbCal705
Instrument 4 - C	4	2	272	22535	7/28/2005 10:24	1575	PbCal705
Instrument 4 - C	5	2	272	23428	7/28/2005 10:02	1575	PbCal705
Instrument 4 - C	6	2	262	23097	7/28/2005 9:43	1575	PbCal705
Instrument 4 - C	7	2	208	19113	7/28/2005 9:35	1575	PbCal705
Instrument 4 - C	8	2	217	20633	7/28/2005 10:05	1575	PbCal705
Instrument 4 - C	9	2	233	18843	7/28/2005 8:53	1575	PbCal705
Instrument 4 - C	10	2	209	20281	7/28/2005 8:50	1575	PbCal705
Instrument 4 - C	11	2	244	19412	7/28/2005 8:43	1575	PbCal705
Instrument 4 - C	12	2	239	20691	7/28/2005 9:21	1575	PbCal705
Instrument 4 - D	1	2	522	21545	7/28/2005 10:25	1575	PbCal705
Instrument 4 - D	2	2	521	22295	7/28/2005 10:20	1575	PbCal705
Instrument 4 - D	3	2	520	20598	7/28/2005 10:16	1575	PbCal705
Instrument 4 - D	4	2	528	22522	7/28/2005 10:09	1575	PbCal705
Instrument 4 - D	5	2	519	23125	7/28/2005 10:05	1575	PbCal705
Instrument 4 - D	6	2	539	23225	7/28/2005 10:02	1575	PbCal705
Instrument 4 - D	7	2	422	18621	7/28/2005 9:43	1575	PbCal705
Instrument 4 - D	8	2	490	20410	7/28/2005 9:35	1575	PbCal705
Instrument 4 - D	9	2	450	18857	7/28/2005 9:21	1575	PbCal705
Instrument 4 - D	10	2	477	20057	7/28/2005 8:53	1575	PbCal705
Instrument 4 - D	11	2	424	19123	7/28/2005 8:50	1575	PbCal705
Instrument 4 - D	12	2	484	20501	7/28/2005 8:43	1575	PbCal705

Pb-210 Efficiency Curve 7/05

Instrument 1

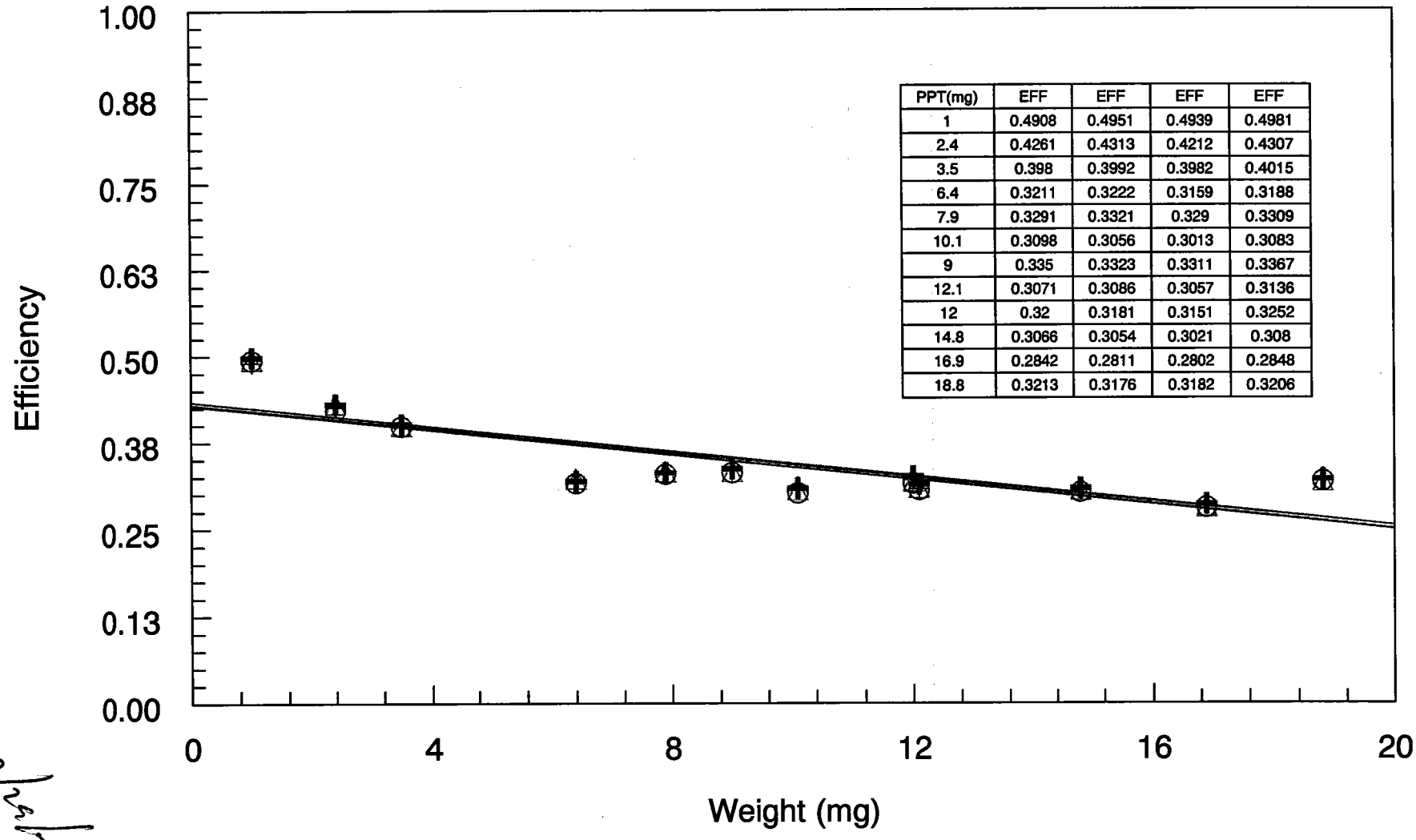


PPT(mg)	EFF	EFF	EFF	EFF
1	0.4948	0.4891	0.4952	0.4939
2.4	0.4278	0.4209	0.4251	0.4228
3.5	0.4032	0.392	0.3959	0.3998
6.4	0.3191	0.3105	0.3186	0.3199
7.9	0.3249	0.3272	0.3268	0.3271
10.1	0.3092	0.3051	0.306	0.3057
9	0.3347	0.3255	0.3337	0.3317
12.1	0.3057	0.3057	0.307	0.3046
12	0.3152	0.3147	0.3197	0.3162
14.8	0.3081	0.2997	0.304	0.3049
16.9	0.2875	0.2792	0.2775	0.2792
18.8	0.3227	0.3137	0.3192	0.3236

Pb-210 Efficiency Curve 7/05

Instrument 2

+ 2-A △ 2-B ○ 2-C ✚ 2-D

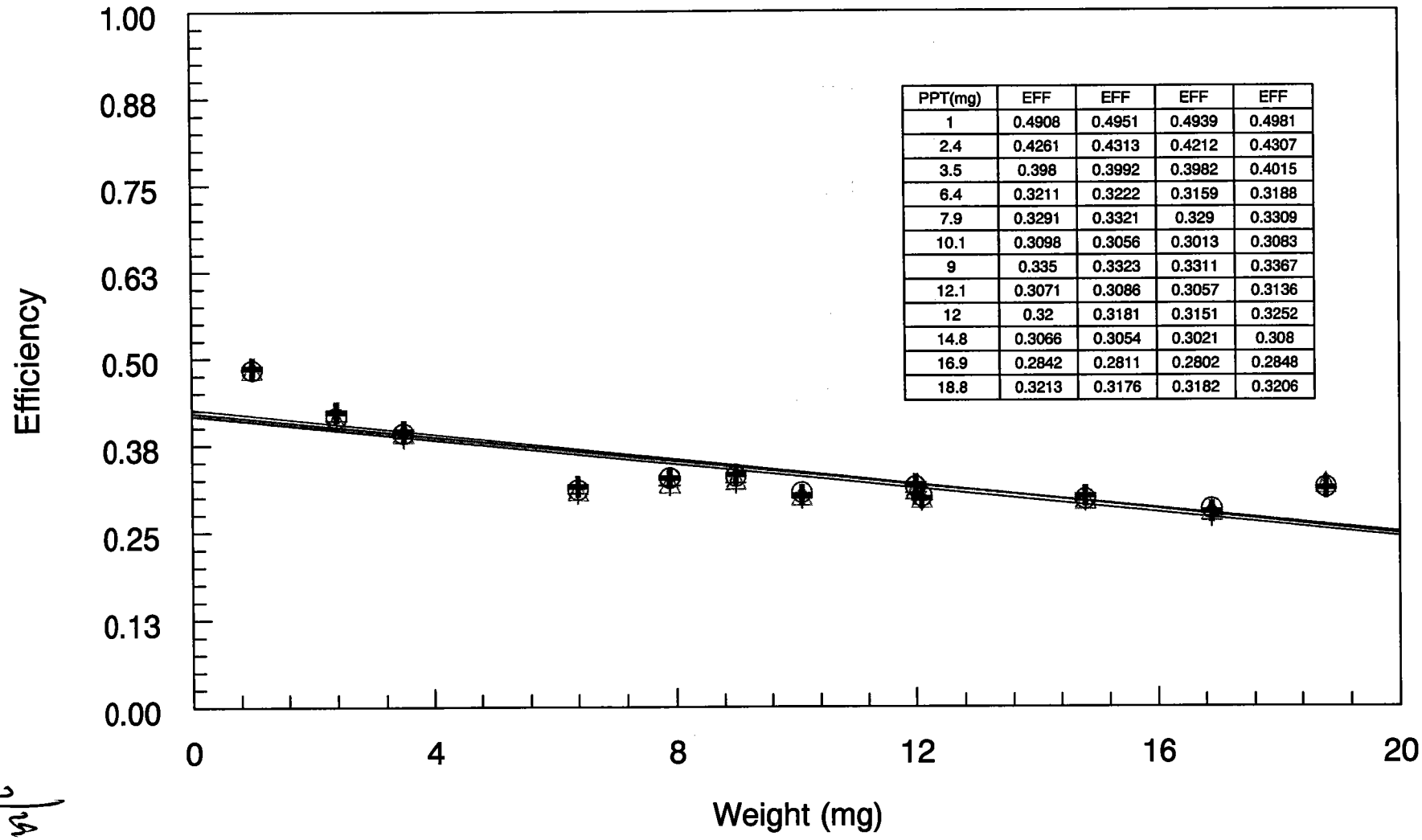


PPT(mg)	EFF	EFF	EFF	EFF
1	0.4908	0.4951	0.4939	0.4981
2.4	0.4261	0.4313	0.4212	0.4307
3.5	0.398	0.3992	0.3982	0.4015
6.4	0.3211	0.3222	0.3159	0.3188
7.9	0.3291	0.3321	0.329	0.3309
10.1	0.3098	0.3056	0.3013	0.3083
9	0.335	0.3323	0.3311	0.3367
12.1	0.3071	0.3086	0.3057	0.3136
12	0.32	0.3181	0.3151	0.3252
14.8	0.3066	0.3054	0.3021	0.308
16.9	0.2842	0.2811	0.2802	0.2848
18.8	0.3213	0.3176	0.3182	0.3206

Pb-210 Efficiency Curve 7/05

Instrument 3

+ 3-A △ 3-B ○ 3-C ✚ 3-D

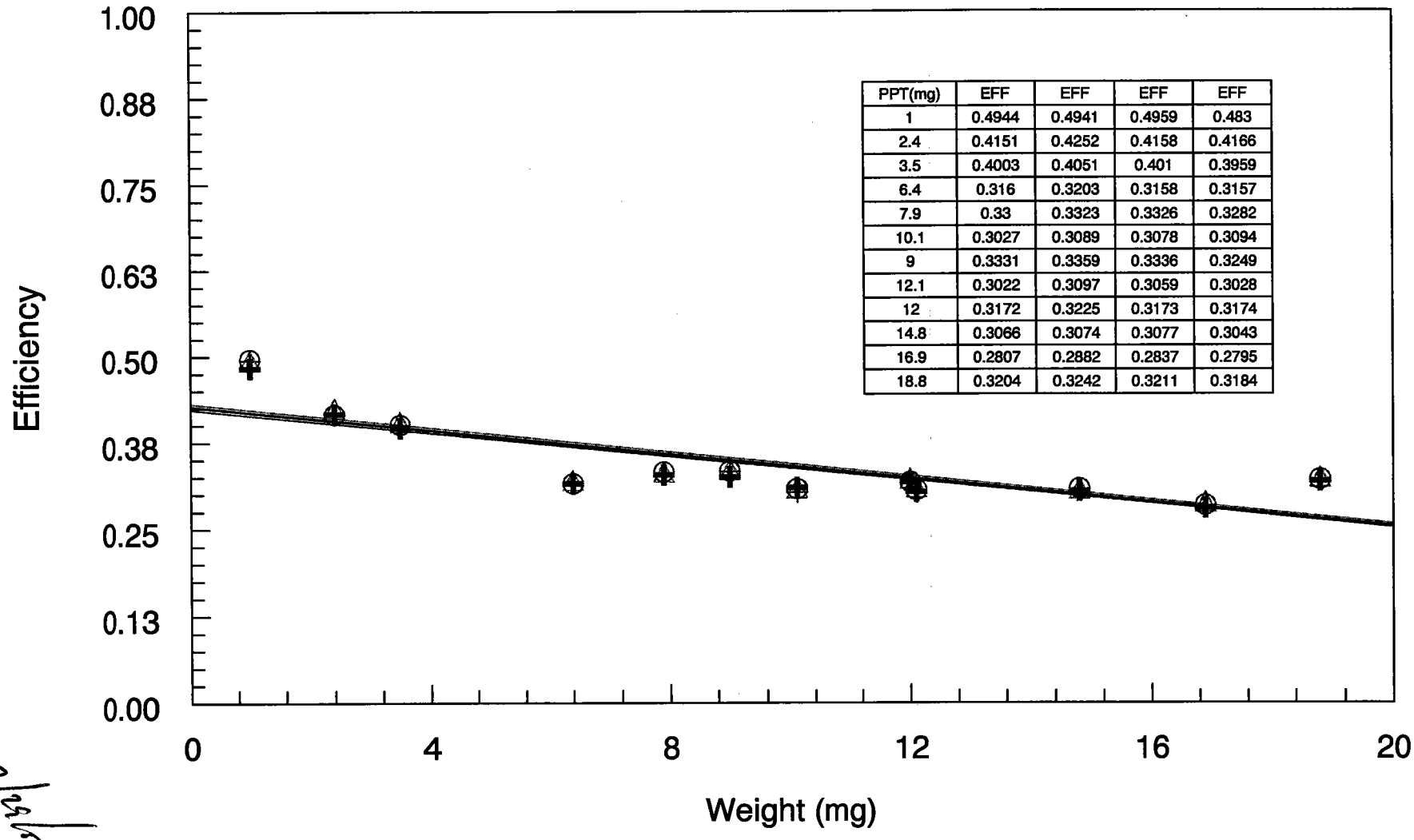


PPT(mg)	EFF	EFF	EFF	EFF
1	0.4908	0.4951	0.4939	0.4981
2.4	0.4261	0.4313	0.4212	0.4307
3.5	0.398	0.3992	0.3982	0.4015
6.4	0.3211	0.3222	0.3159	0.3188
7.9	0.3291	0.3321	0.329	0.3309
10.1	0.3098	0.3056	0.3013	0.3083
9	0.335	0.3323	0.3311	0.3367
12.1	0.3071	0.3086	0.3057	0.3136
12	0.32	0.3181	0.3151	0.3252
14.8	0.3066	0.3054	0.3021	0.308
16.9	0.2842	0.2811	0.2802	0.2848
18.8	0.3213	0.3176	0.3182	0.3206

Pb-210 Efficiency Curve 7/05

Instrument 4

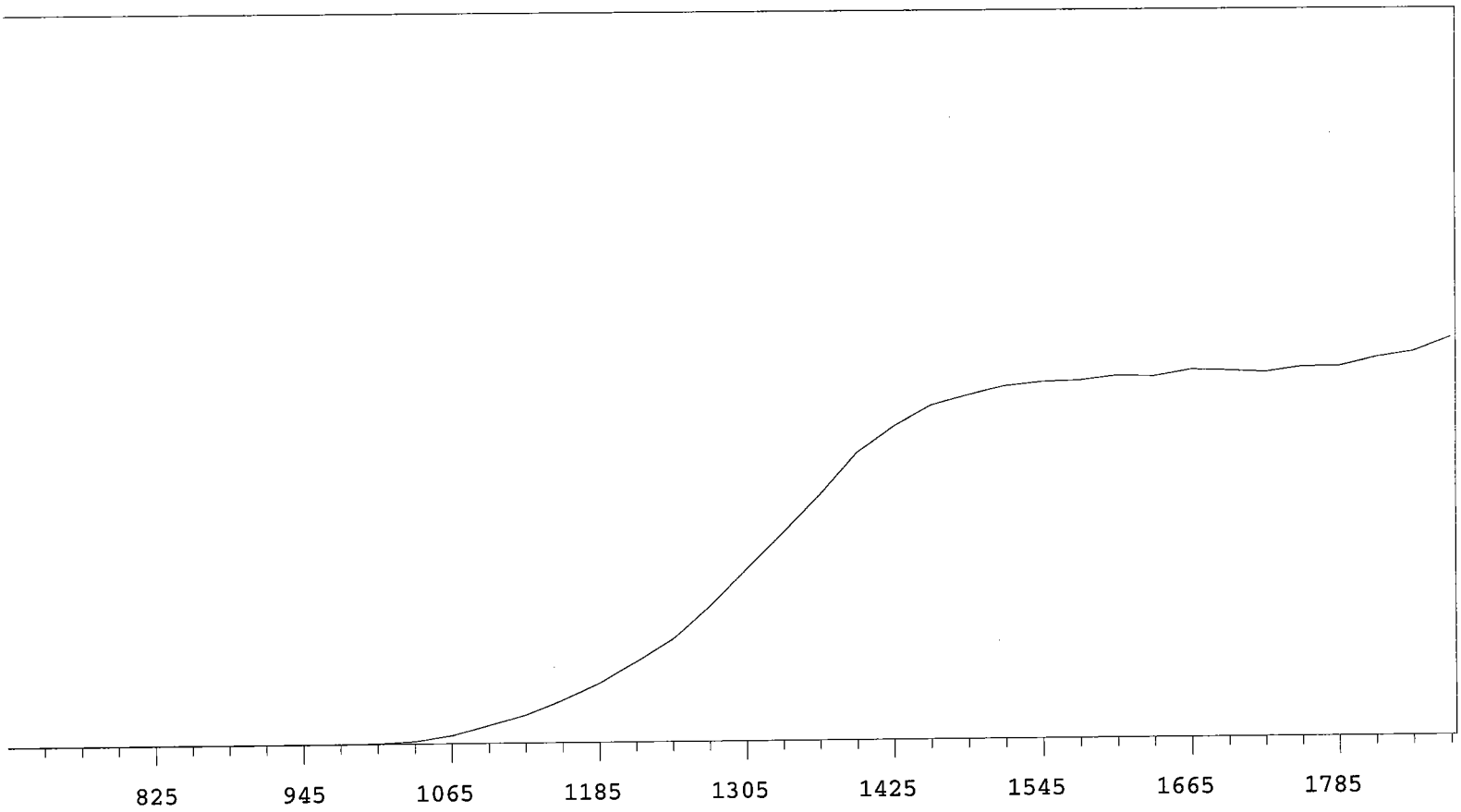
+ 4-A △ 4-B ○ 4-C ✚ 4-D



PPT(mg)	EFF	EFF	EFF	EFF
1	0.4944	0.4941	0.4959	0.483
2.4	0.4151	0.4252	0.4158	0.4166
3.5	0.4003	0.4051	0.401	0.3959
6.4	0.316	0.3203	0.3158	0.3157
7.9	0.33	0.3323	0.3326	0.3282
10.1	0.3027	0.3089	0.3078	0.3094
9	0.3331	0.3359	0.3336	0.3249
12.1	0.3022	0.3097	0.3059	0.3028
12	0.3172	0.3225	0.3173	0.3174
14.8	0.3066	0.3074	0.3077	0.3043
16.9	0.2807	0.2882	0.2837	0.2795
18.8	0.3204	0.3242	0.3211	0.3184

Plateau 07/18/05 Instrument 1 MPC 9604 Detector A 7/18/2005

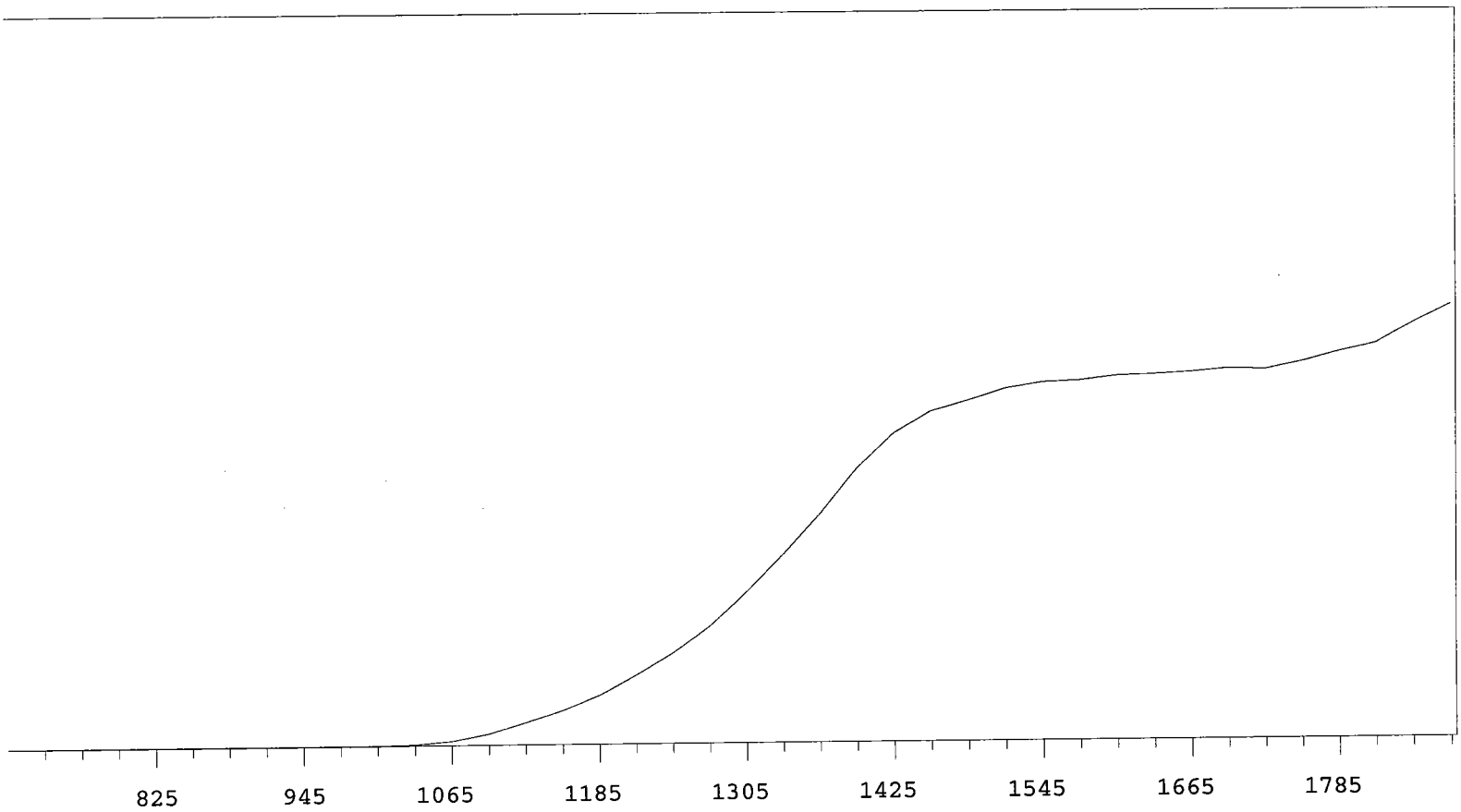
Alpha Volts: 1575 Beta Volts: 1575



VOLTS	COUNTS	%/100 Volts
705	3	
735	1	
765	1	-18.52
795	2	>100
825	2	+76.92
855	6	+0.00
885	2	+0.00
915	2	+0.00
945	4	>100
975	5	>100
1005	45	>100
1035	260	>100
1065	800	>100
1095	1706	>100
1125	2681	>100
1155	4043	>100
1185	5606	+98.69
1215	7546	+90.11
1245	9680	+84.91
1275	12706	+78.21
1305	16206	+70.03
1335	19739	+60.77
1365	23317	+49.57
1395	27238	+38.47
1425	29745	+26.87
1455	31733	+16.81
1485	32738	+10.51
1515	33561	+5.83
1545	33929	+3.90
1575	34042	+2.13
1605	34473	+2.40
1635	34376	+2.14
1665	34998	+0.99
1695	34891	+1.35
1725	34732	+0.78
1755	35214	+2.68
1785	35247	+4.20
1815	36051	+6.12
1845	36556	
1875	37879	

Plateau 07/18/05 Instrument 1 MPC 9604 Detector B 7/18/2005

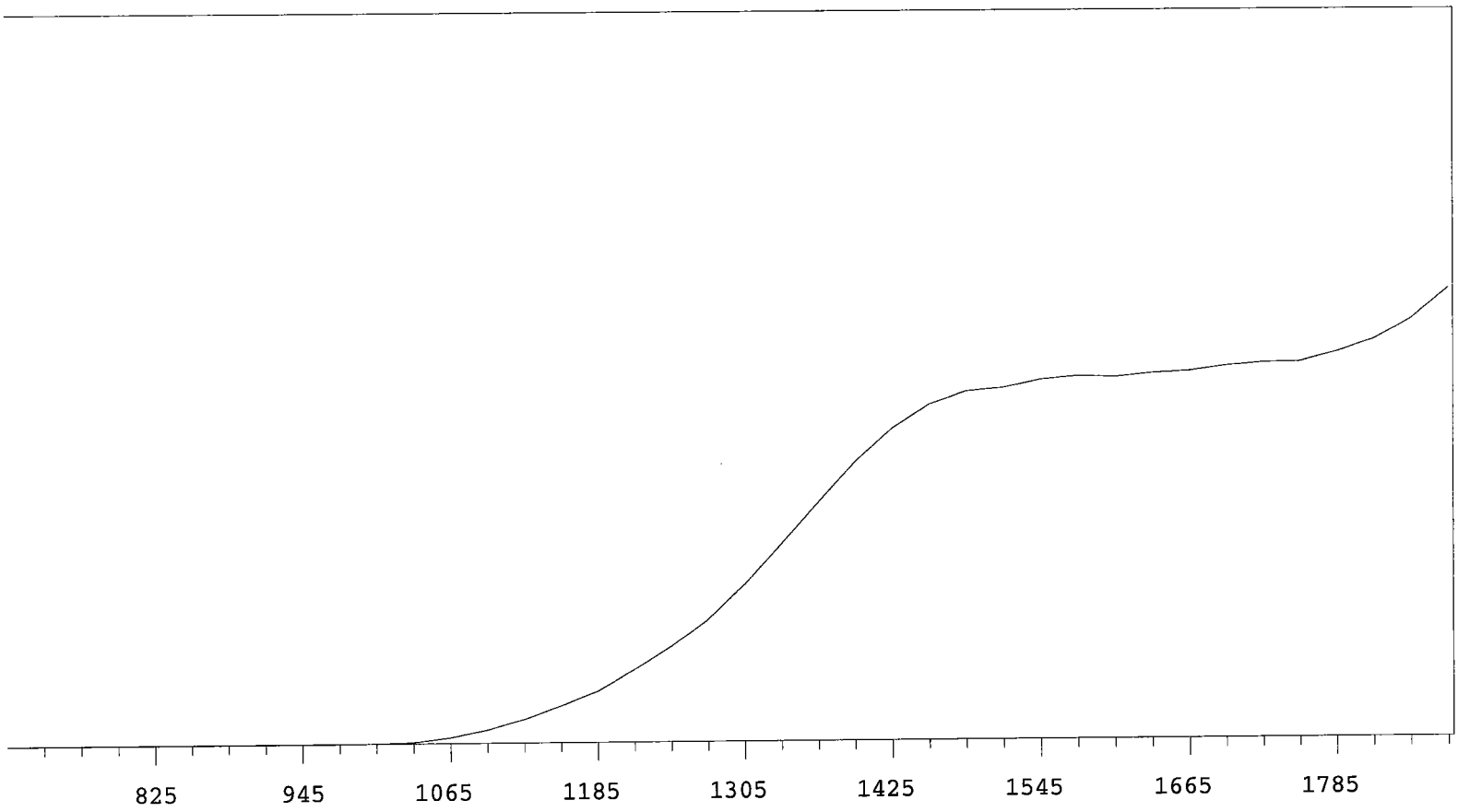
Alpha Volts: 1575 Beta Volts: 1575



VOLTS	COUNTS	%/100 Volts
705	1	
735	2	
765	3	+33.33
795	2	-15.15
825	2	-30.30
855	2	+0.00
885	2	+55.56
915	2	+71.43
945	4	>100
975	4	>100
1005	7	>100
1035	115	>100
1065	458	>100
1095	1190	>100
1125	2315	>100
1155	3550	>100
1185	5136	>100
1215	7197	+97.45
1245	9511	+89.47
1275	12416	+81.91
1305	16022	+74.49
1335	19934	+67.06
1365	24065	+57.27
1395	28750	+45.17
1425	32437	+31.43
1455	34703	+19.63
1485	35773	+11.94
1515	37013	+7.34
1545	37643	+5.08
1575	37795	+2.85
1605	38223	+2.11
1635	38341	+2.22
1665	38578	+1.47
1695	38896	+2.28
1725	38794	+3.94
1755	39562	+5.68
1785	40569	+9.25
1815	41402	+11.70
1845	43531	
1875	45470	

Plateau 07/18/05 Instrument 1 MPC 9604 Detector C 7/18/2005

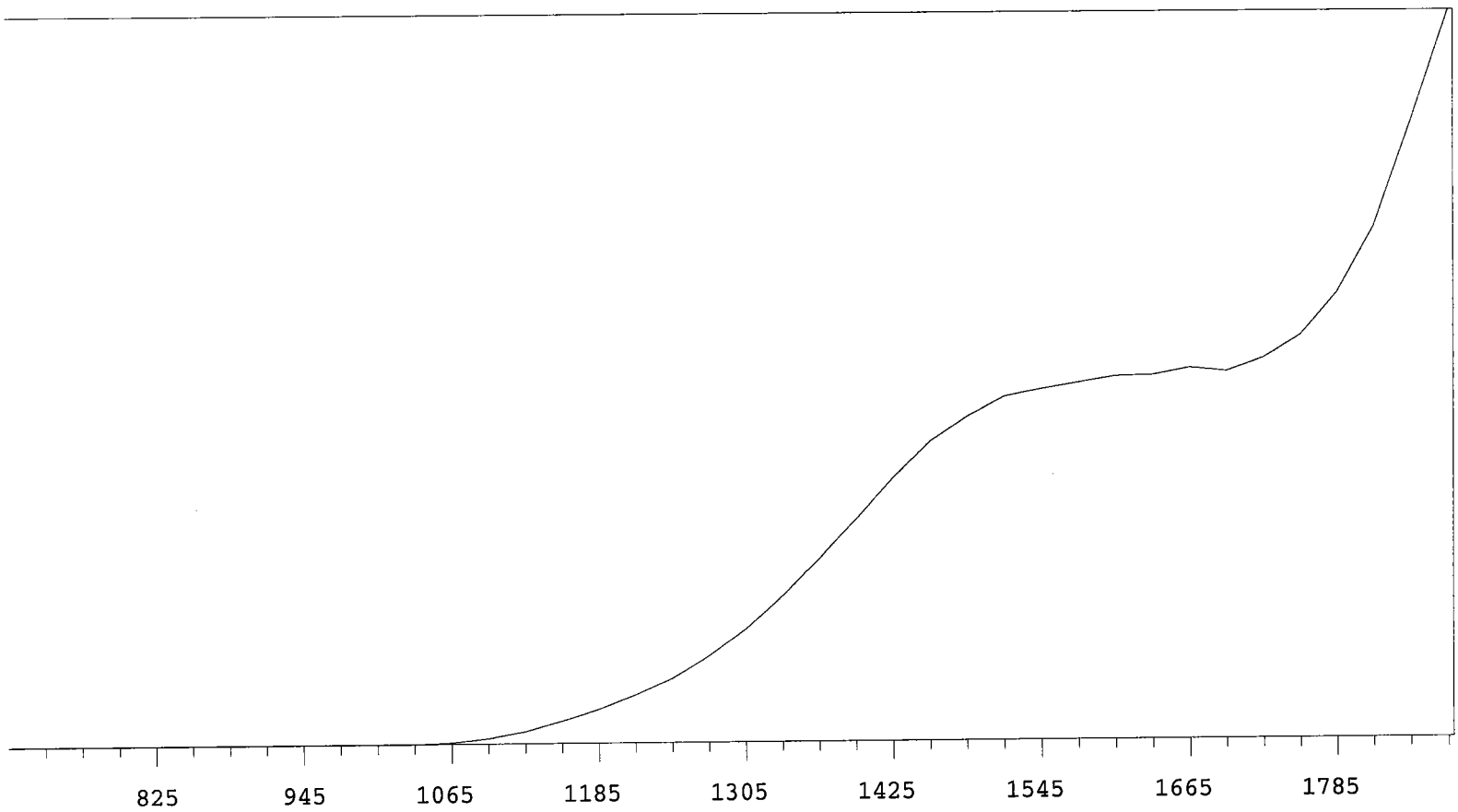
Alpha Volts: 1575 Beta Volts: 1575



VOLTS	COUNTS	%/100 Volts
705	0	
735	0	
765	0	
795	1	>100
825	0	>100
855	2	+95.24
885	2	>100
915	2	+64.10
945	3	>100
975	4	>100
1005	17	>100
1035	154	>100
1065	602	>100
1095	1390	>100
1125	2520	>100
1155	3909	>100
1185	5395	>100
1215	7579	+92.75
1245	9892	+86.09
1275	12623	+79.89
1305	16230	+74.23
1335	20402	+66.21
1365	24668	+55.06
1395	28808	+42.90
1425	32235	+30.71
1455	34745	+19.08
1485	36123	+11.26
1515	36502	+6.50
1545	37333	+3.68
1575	37699	+2.82
1605	37570	+1.69
1635	37966	+2.25
1665	38158	+3.13
1695	38687	+2.67
1725	39009	+3.61
1755	39083	+5.36
1785	40069	+9.12
1815	41344	+14.50
1845	43429	
1875	46557	

Plateau 07/18/05 Instrument 1 MPC 9604 Detector D 7/18/2005

Alpha Volts: 1575 Beta Volts: 1575



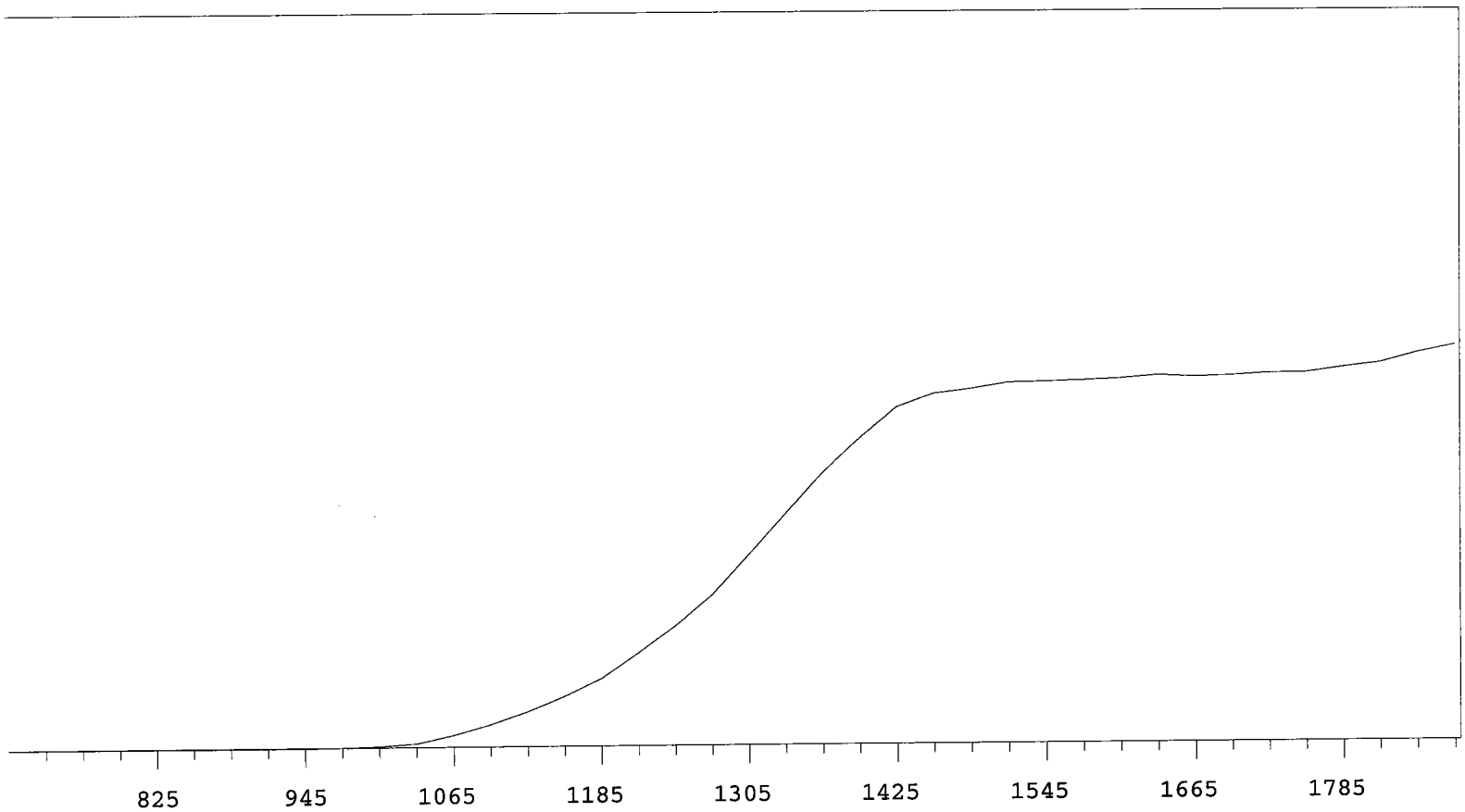
VOLTS	COUNTS	%/100 Volts
705	0	
735	1	
765	2	+0.00
795	1	-66.67
825	0	>100
855	1	+0.00
885	0	+0.00
915	1	+83.33
945	0	>100
975	2	>100
1005	1	>100
1035	13	>100
1065	134	>100
1095	511	>100
1125	1129	>100
1155	2134	>100
1185	3197	>100
1215	4542	>100
1245	6086	+97.20
1275	8291	+90.92

VOLTS	COUNTS	%/100 Volts
1305	10971	+84.34
1335	14097	+75.14
1365	17622	+66.59
1395	21247	+57.12
1425	25202	+45.74
1455	28604	+34.50
1485	30899	+22.78
1515	32756	+13.99
1545	33437	+8.81
1575	34038	+5.07
1605	34638	+4.42
1635	34735	+2.60
1665	35372	+3.37
1695	35026	+7.70
1725	36274	+15.84
1755	38436	+28.19
1785	42586	+41.27
1815	48885	+52.29
1845	58919	
1875	71030	

7/19/06

Plateau 07/18/05 Instrument 2 MPC 9604 Detector A 7/18/2005

Alpha Volts: 705 Beta Volts: 1575

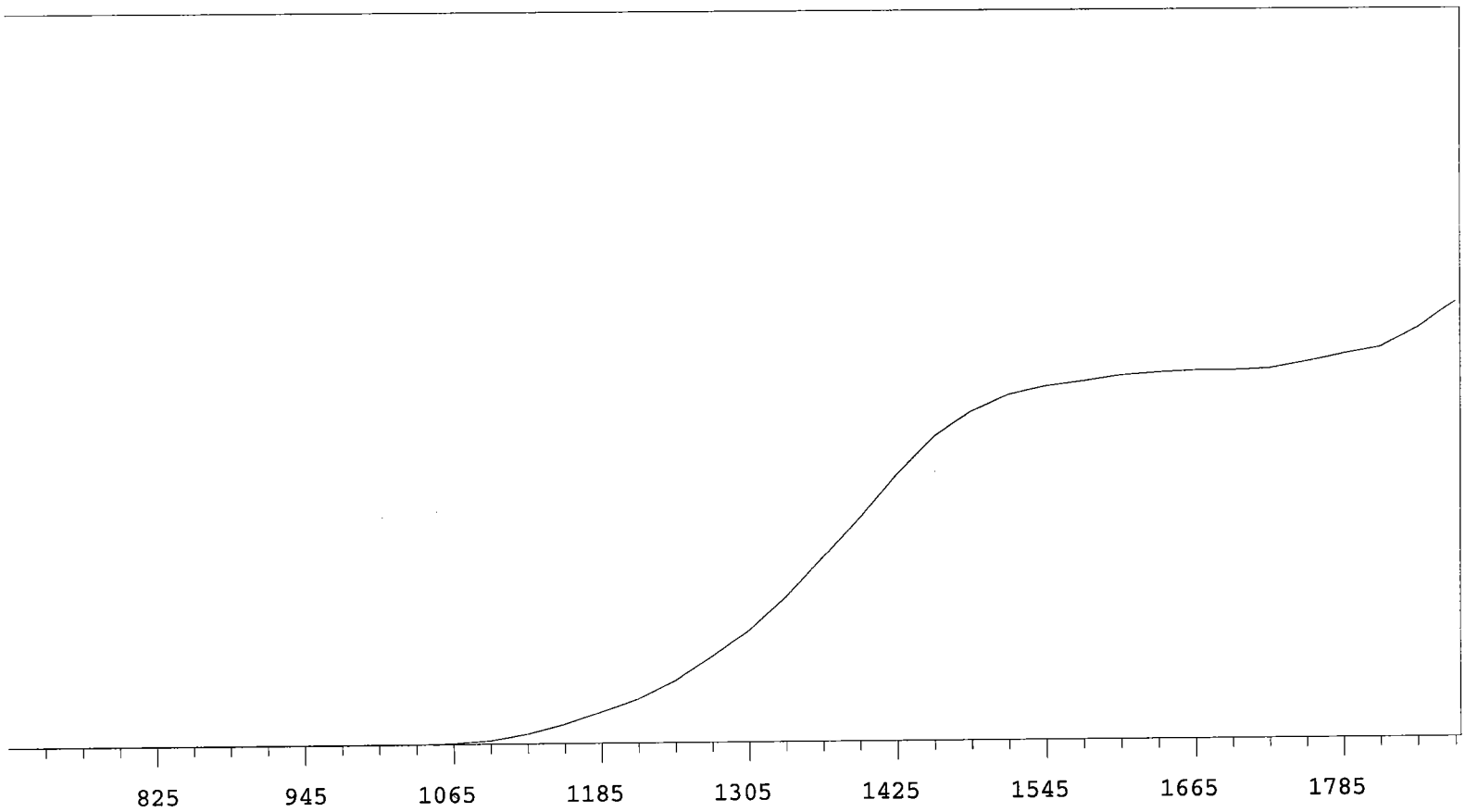


VOLTS	COUNTS	%/100 Volts
705	0	
735	0	
765	0	
795	0	>100
825	0	>100
855	0	>100
885	4	+33.33
915	1	>100
945	0	>100
975	25	>100
1005	123	>100
1035	462	>100
1065	1382	>100
1095	2620	>100
1125	4094	>100
1155	5833	>100
1185	7915	+97.20
1215	10844	+88.32
1245	14050	+81.59
1275	17692	+73.63

VOLTS	COUNTS	%/100 Volts
1305	22314	+66.02
1335	27016	+56.65
1365	31730	+46.09
1395	35861	+34.20
1425	39521	+21.96
1455	41096	+12.55
1485	41618	+5.70
1515	42360	+2.97
1545	42428	+1.93
1575	42562	+1.42
1605	42743	+1.15
1635	43108	+0.84
1665	42891	+0.79
1695	43031	+0.67
1725	43288	+1.82
1755	43345	+2.62
1785	43916	+4.27
1815	44430	+5.91
1845	45569	
1875	46488	

Plateau 07/18/05 Instrument 2 MPC 9604 Detector B 7/18/2005

Alpha Volts: 705 Beta Volts: 1575

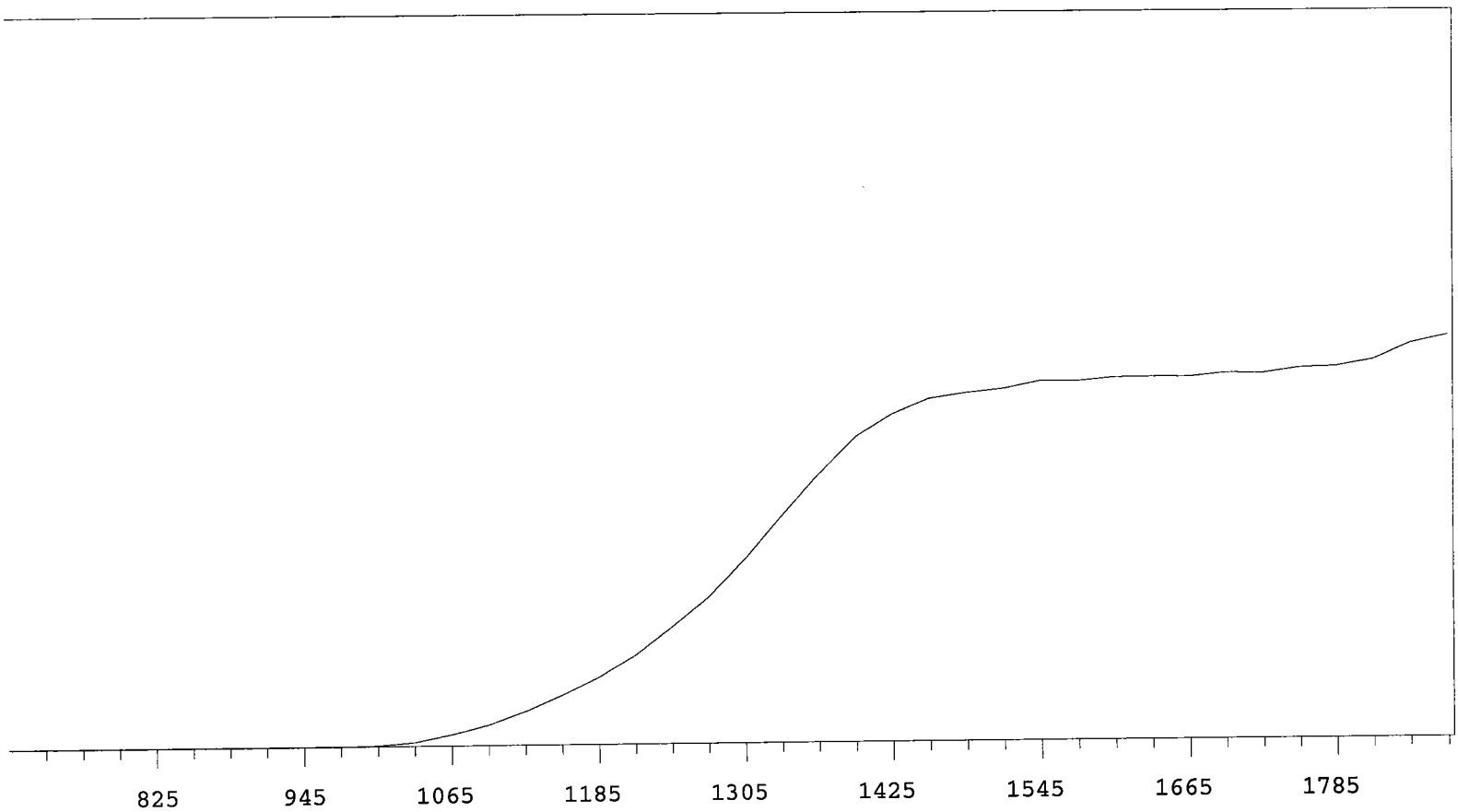


VOLTS	COUNTS	%/100 Volts
705	0	
735	1	
765	2	+66.67
795	1	-27.78
825	1	+0.00
855	1	>100
885	2	+74.07
915	3	+0.00
945	2	+51.28
975	1	>100
1005	5	>100
1035	11	>100
1065	76	>100
1095	354	>100
1125	989	>100
1155	1937	>100
1185	3197	>100
1215	4514	>100
1245	6395	>100
1275	8812	+93.25

VOLTS	COUNTS	%/100 Volts
1305	11504	+85.43
1335	14849	+76.81
1365	18861	+68.80
1395	22846	+58.63
1425	27157	+46.27
1455	30851	+34.04
1485	33326	+22.12
1515	34995	+13.15
1545	35846	+7.97
1575	36351	+4.94
1605	36888	+3.44
1635	37159	+2.18
1665	37334	+1.21
1695	37337	+1.96
1725	37477	+3.64
1755	38192	+5.29
1785	38972	+8.13
1815	39629	+11.94
1845	41535	
1875	44161	

Plateau 07/18/05 Instrument 2 MPC 9604 Detector C 7/18/2005

Alpha Volts: 705 Beta Volts: 1575

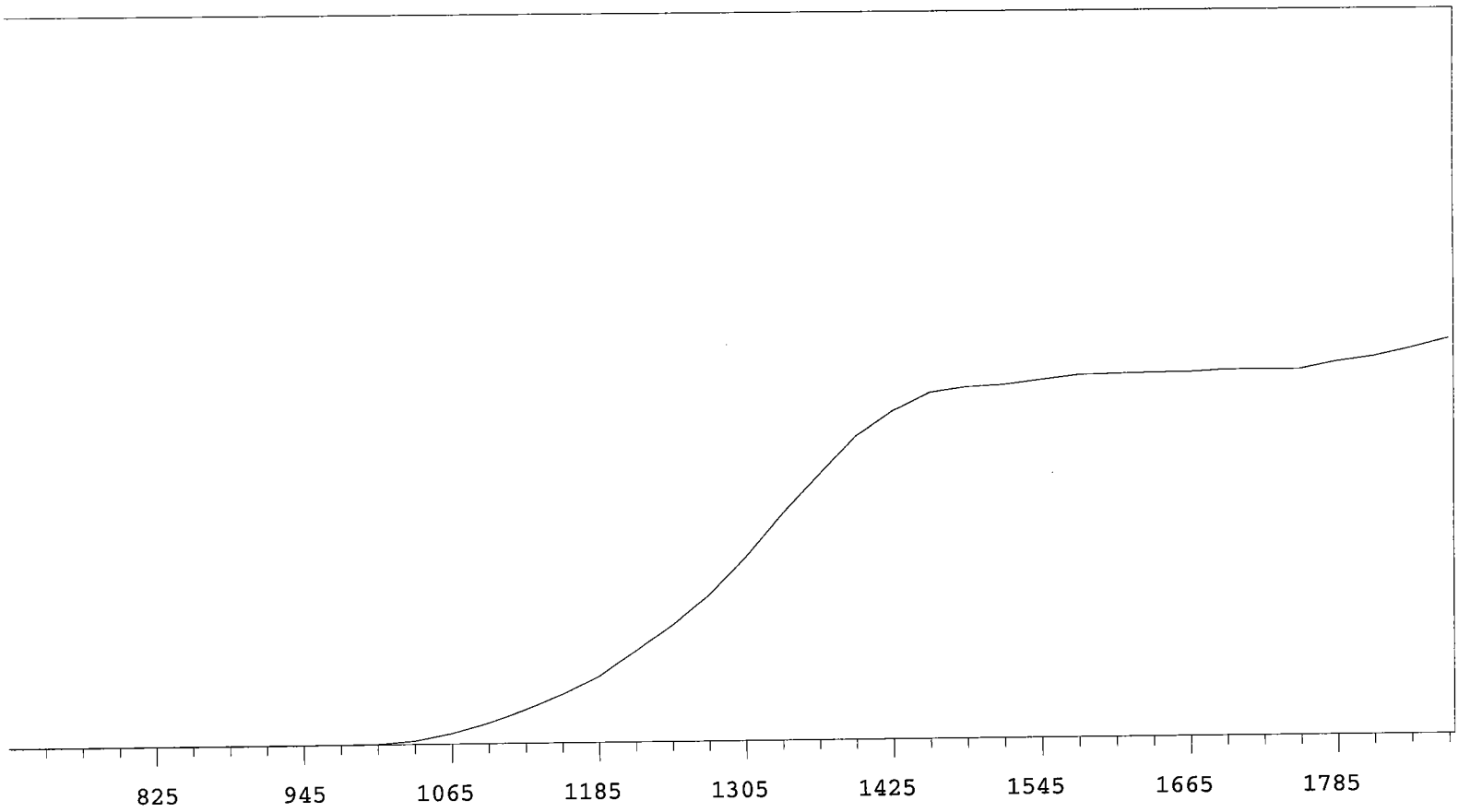


VOLTS	COUNTS	%/100 Volts
705	2	
735	6	
765	3	-20.83
795	2	-58.82
825	3	-41.67
855	3	-66.67
885	1	-30.30
915	1	>100
945	3	>100
975	9	>100
1005	87	>100
1035	349	>100
1065	1009	>100
1095	1793	>100
1125	2982	>100
1155	4367	>100
1185	5942	+97.04
1215	7886	+87.16
1245	10422	+80.66
1275	13013	+74.57
1305	16352	+67.34
1335	20077	+59.09
1365	23789	+46.51
1395	27076	+33.20
1425	29091	+20.71
1455	30421	+11.33
1485	30894	+6.95
1515	31231	+4.14
1545	31889	+3.39
1575	31864	+2.37
1605	32186	+0.96
1635	32217	+1.30
1665	32174	+0.81
1695	32499	+1.72
1725	32437	+2.17
1755	32922	+2.82
1785	33023	+5.92
1815	33599	+7.59
1845	35066	
1875	35778	

pm 7/29/05

Plateau 07/18/05 Instrument 2 MPC 9604 Detector D 7/18/2005

Alpha Volts: 705 Beta Volts: 1575

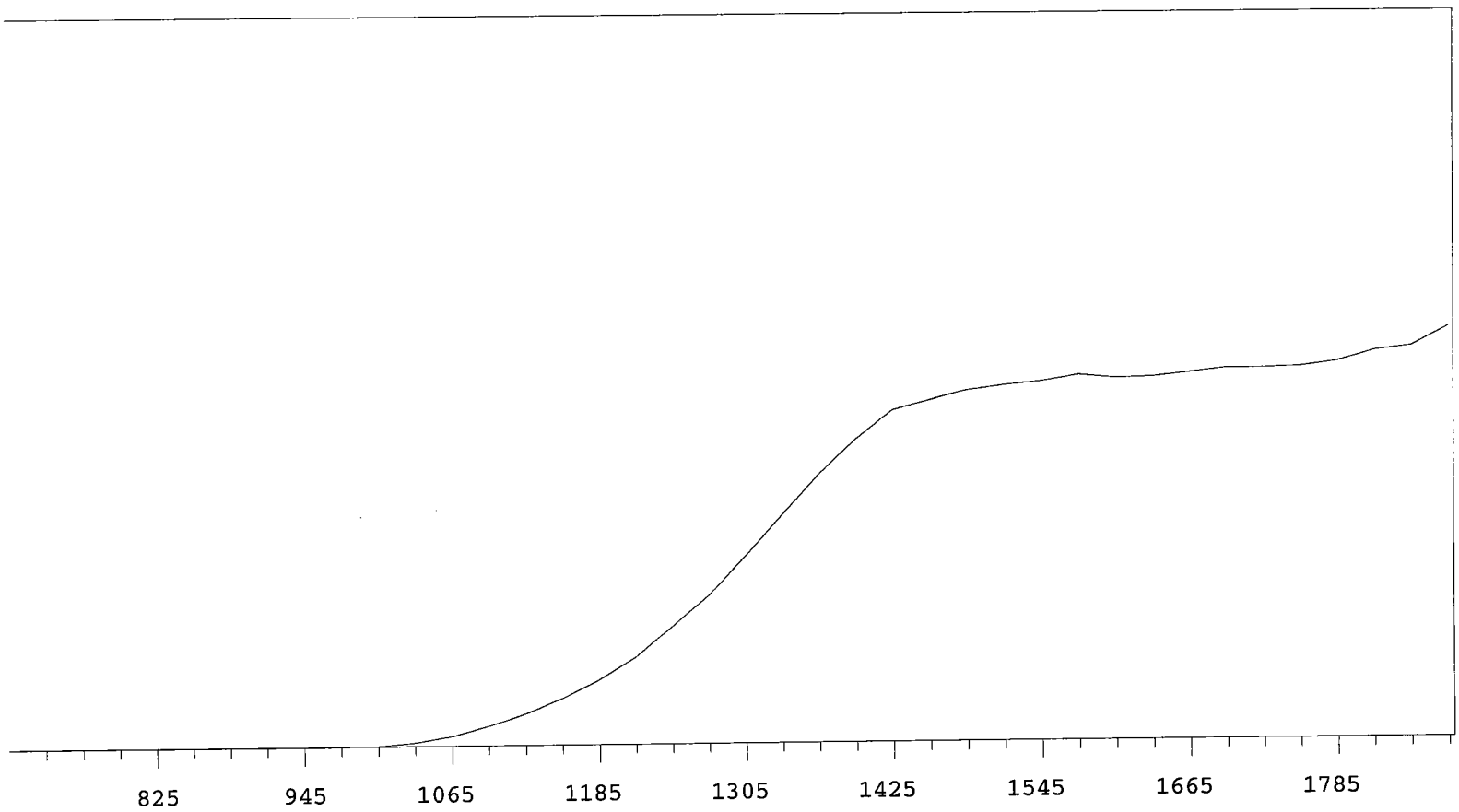


VOLTS	COUNTS	%/100 Volts
705	3	
735	1	
765	3	-55.56
795	0	-23.81
825	2	>100
855	1	>100
885	0	+66.67
915	5	>100
945	2	>100
975	19	>100
1005	86	>100
1035	451	>100
1065	1295	>100
1095	2525	>100
1125	4114	>100
1155	5953	>100
1185	8113	+98.45
1215	11136	+88.70
1245	14448	+81.12
1275	18173	+74.07

VOLTS	COUNTS	%/100 Volts
1305	22754	+66.54
1335	27979	+58.16
1365	32713	+46.35
1395	37461	+34.14
1425	40450	+22.38
1455	42675	+12.11
1485	43308	+6.46
1515	43568	+3.76
1545	44157	+3.14
1575	44714	+2.51
1605	44814	+1.32
1635	44910	+0.82
1665	44945	+0.82
1695	45204	+0.66
1725	45222	+1.70
1755	45215	+2.80
1785	46095	+4.67
1815	46688	+6.29
1845	47723	
1875	48829	

Plateau 07/18/05 Instrument 3 MPC 9604 Detector A 7/18/2005

Alpha Volts: 705 Beta Volts: 1575

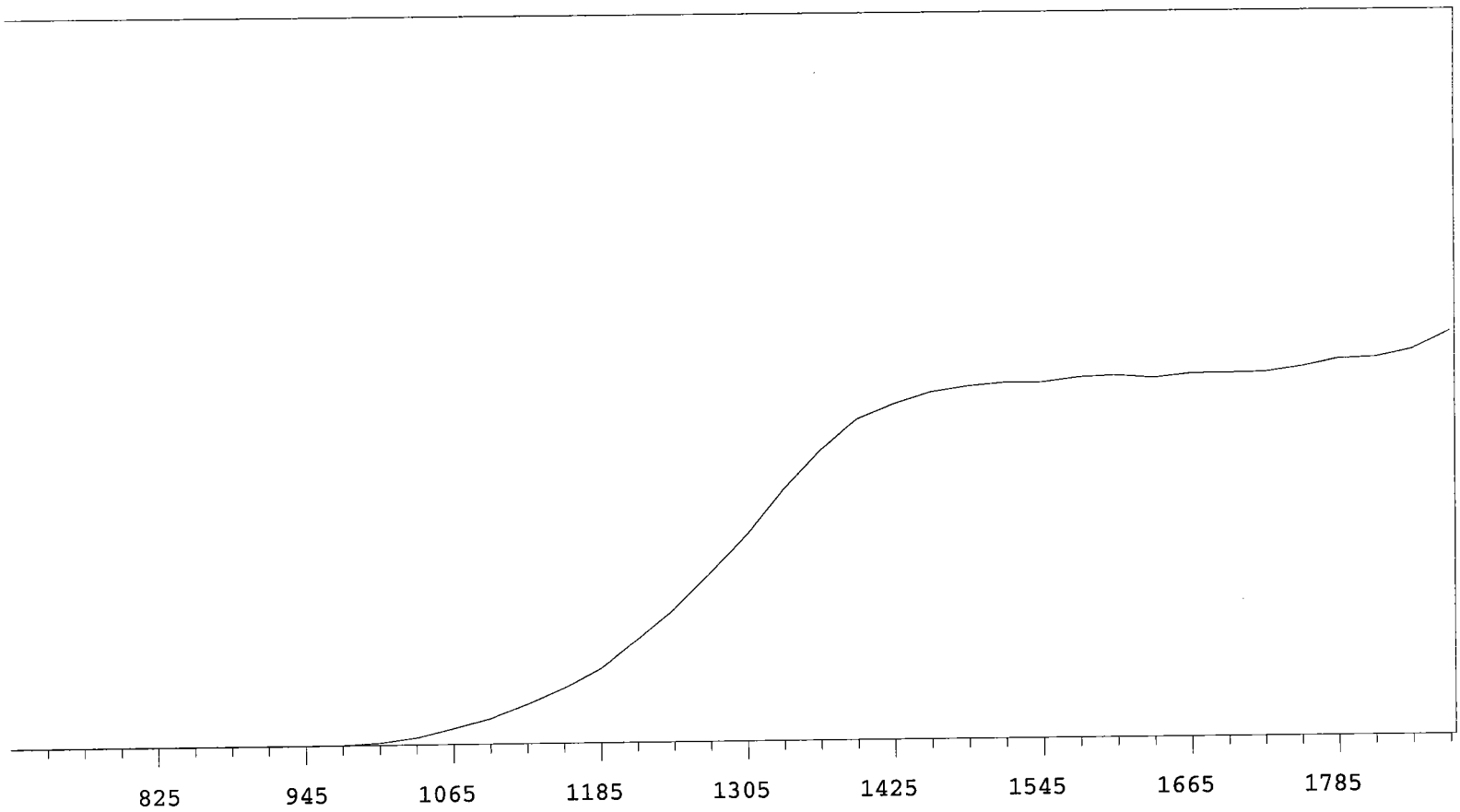


VOLTS	COUNTS	%/100 Volts
705	4	
735	4	
765	0	
795	0	+18.52
825	1	>100
855	4	+100.00
885	3	-30.30
915	2	+20.83
945	1	>100
975	6	>100
1005	71	>100
1035	402	>100
1065	1048	>100
1095	2130	>100
1125	3384	>100
1155	4976	>100
1185	6855	>100
1215	9208	+92.12
1245	12454	+85.04
1275	15798	+76.70

VOLTS	COUNTS	%/100 Volts
1305	19958	+67.03
1335	24246	+57.28
1365	28539	+46.21
1395	32266	+33.26
1425	35414	+21.60
1455	36466	+12.52
1485	37462	+6.66
1515	37985	+5.29
1545	38363	+3.02
1575	39020	+1.64
1605	38677	+1.19
1635	38778	+1.48
1665	39179	+2.33
1695	39636	+2.03
1725	39616	+1.90
1755	39758	+3.40
1785	40252	+4.91
1815	41367	+7.87
1845	41801	
1875	43872	

Plateau 07/18/05 Instrument 3 MPC 9604 Detector B 7/18/2005

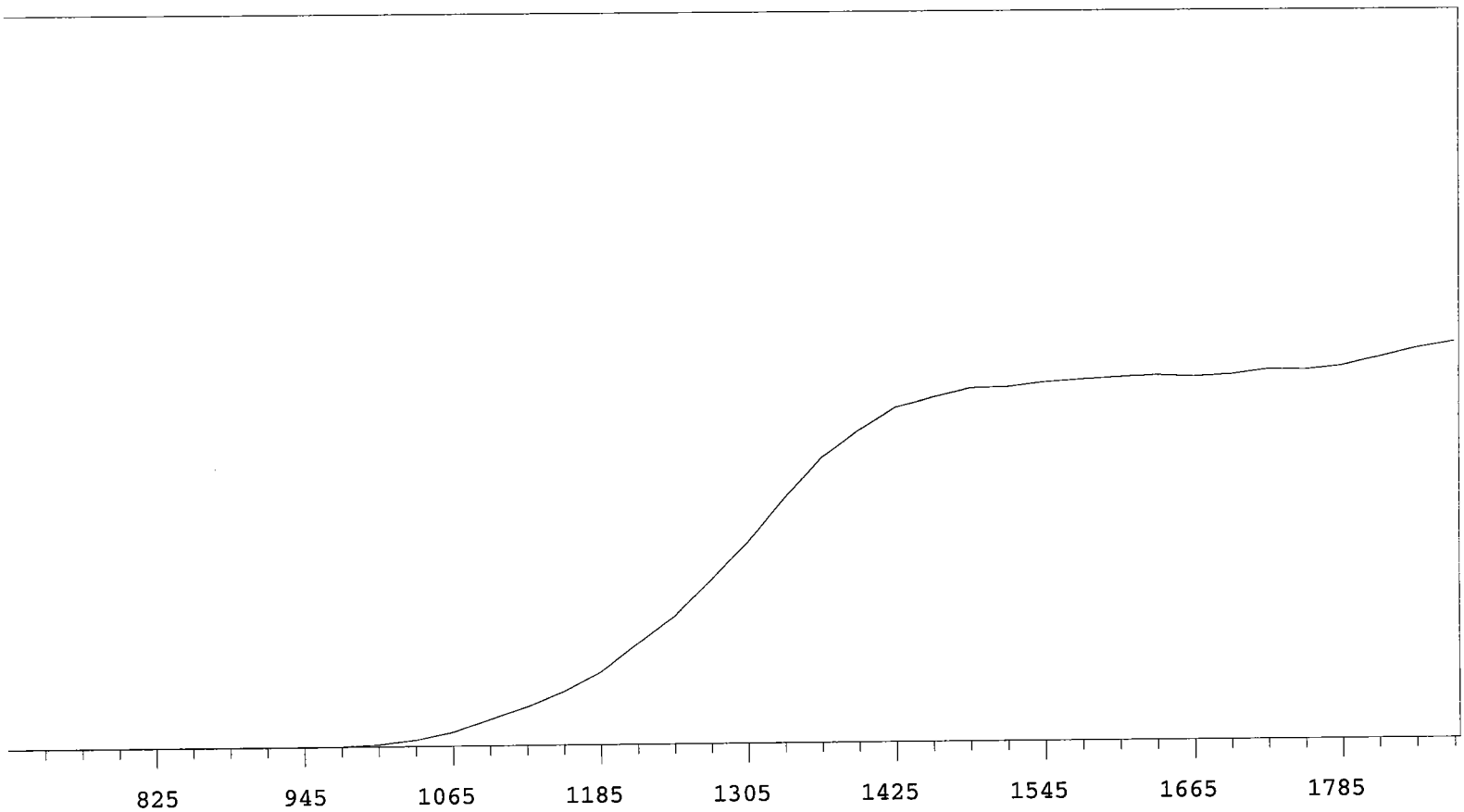
Alpha Volts: 705 Beta Volts: 1575



VOLTS	COUNTS	%/100 Volts
705	1	
735	0	
765	1	
795	2	>100
825	3	+0.00
855	2	-33.33
885	1	-33.33
915	2	>100
945	2	>100
975	23	>100
1005	188	>100
1035	628	>100
1065	1402	>100
1095	2202	>100
1125	3405	>100
1155	4734	>100
1185	6329	+95.04
1215	8730	+88.10
1245	11220	+79.46
1275	14252	+70.70
1305	17371	+61.82
1335	21059	+51.03
1365	24146	+38.17
1395	26716	+25.34
1425	27972	+15.55
1455	28941	+8.73
1485	29433	+4.91
1515	29724	+2.97
1545	29727	+2.22
1575	30112	+1.21
1605	30235	+1.21
1635	30012	+0.64
1665	30324	+0.75
1695	30358	+1.95
1725	30404	+3.02
1755	30862	+3.77
1785	31464	+4.62
1815	31575	+6.76
1845	32217	
1875	33728	

Plateau 07/18/05 Instrument 3 MPC 9604 Detector C 7/18/2005

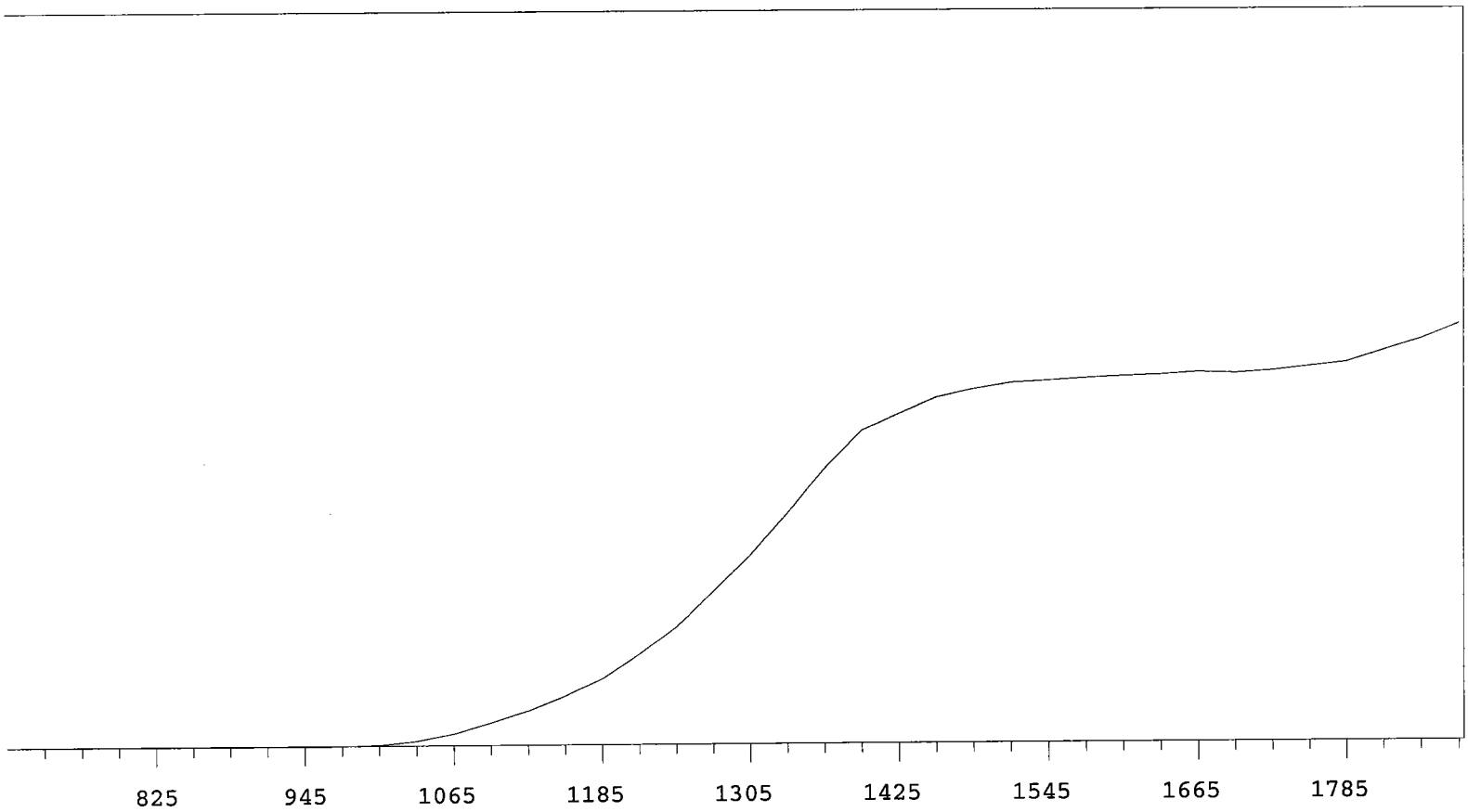
Alpha Volts: 705 Beta Volts: 1575



VOLTS	COUNTS	%/100 Volts
705	0	
735	1	
765	2	-55.56
795	0	-83.33
825	0	>100
855	1	>100
885	0	>100
915	1	>100
945	7	>100
975	26	>100
1005	201	>100
1035	622	>100
1065	1395	>100
1095	2589	>100
1125	3807	>100
1155	5311	>100
1185	7258	+96.60
1215	10100	+88.77
1245	12793	+79.49
1275	16338	+71.46

VOLTS	COUNTS	%/100 Volts
1305	19992	+64.10
1335	24434	+52.32
1365	28341	+40.24
1395	31016	+27.00
1425	33244	+17.26
1455	34234	+10.11
1485	35116	+5.57
1515	35198	+3.72
1545	35658	+2.57
1575	35928	+2.43
1605	36121	+1.20
1635	36271	+0.67
1665	36135	+1.26
1695	36285	+1.47
1725	36799	+2.20
1755	36745	+3.29
1785	37112	+4.71
1815	37953	+6.34
1845	38842	
1875	39499	

Plateau 07/18/05 Instrument 3 MPC 9604 Detector D 7/18/2005
Alpha Volts: 705 Beta Volts: 1575



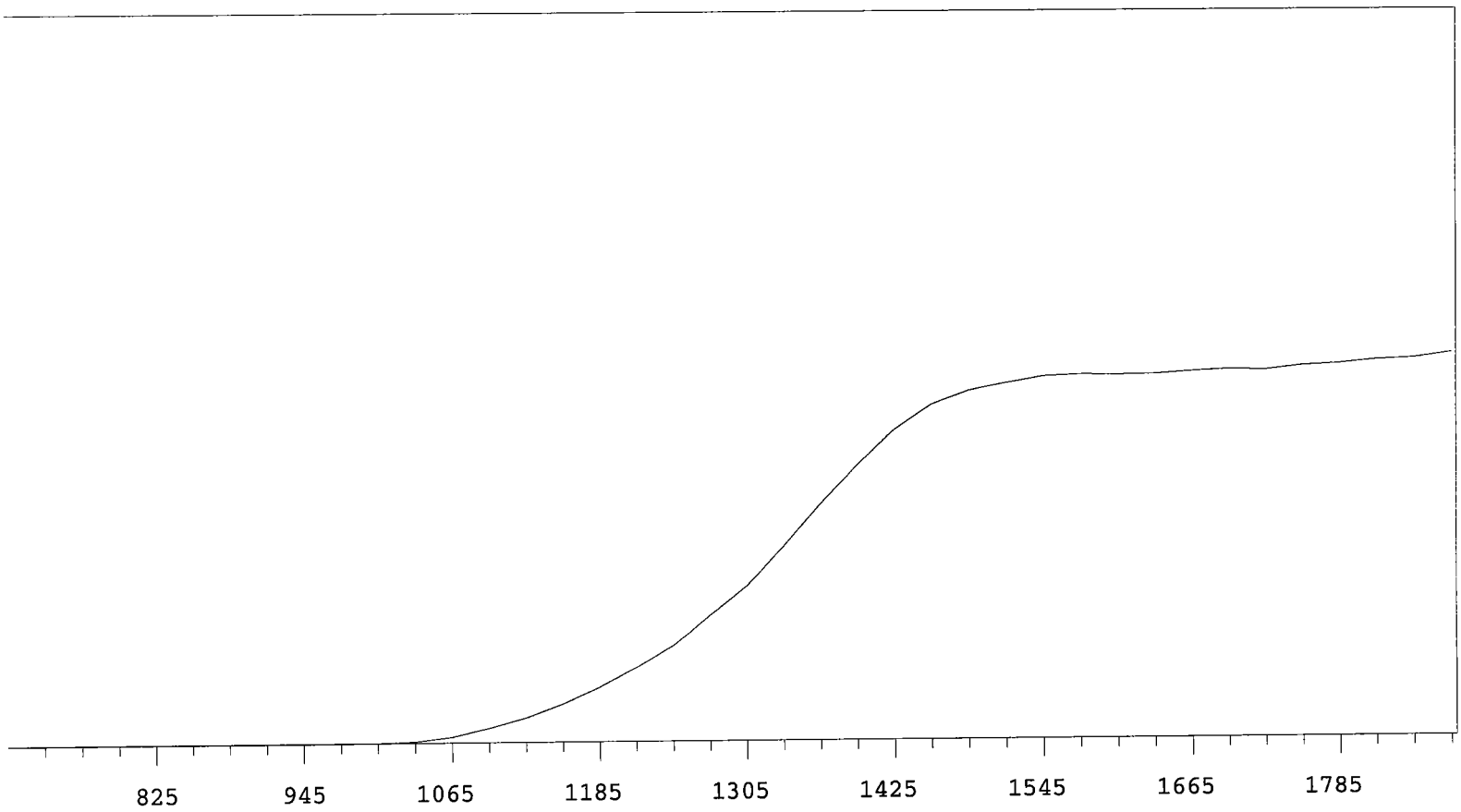
VOLTS	COUNTS	%/100 Volts
705	3	
735	0	
765	0	-27.78
795	1	>100
825	2	+41.67
855	0	+27.78
885	1	+0.00
915	2	>100
945	1	>100
975	12	>100
1005	101	>100
1035	505	>100
1065	1271	>100
1095	2435	>100
1125	3717	>100
1155	5349	>100
1185	7264	+98.50
1215	9948	+91.79
1245	13035	+83.57
1275	16927	+74.29

VOLTS	COUNTS	%/100 Volts
1305	20823	+66.52
1335	25209	+57.37
1365	30058	+44.75
1395	34207	+31.58
1425	35961	+19.48
1455	37712	+11.46
1485	38621	+7.54
1515	39266	+4.27
1545	39505	+2.69
1575	39765	+1.77
1605	39960	+1.71
1635	40095	+1.10
1665	40363	+0.99
1695	40227	+1.48
1725	40494	+2.25
1755	40925	+4.61
1785	41387	+6.78
1815	42624	+9.20
1845	43902	
1875	45583	

7/25/05

Plateau 07/18/05 Instrument 4 MPC 9604 Detector A 7/18/2005

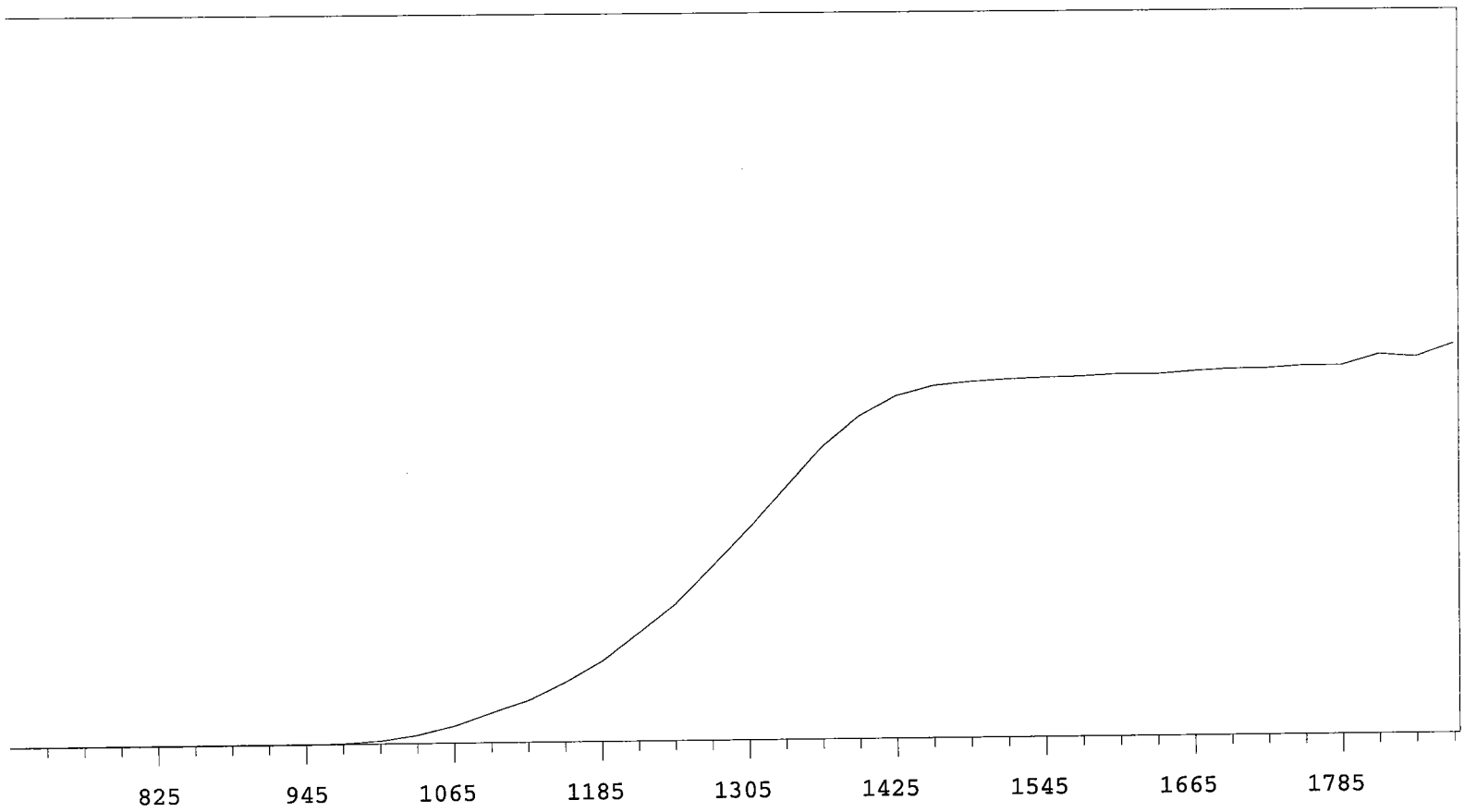
Alpha Volts: 705 Beta Volts: 1575



VOLTS	COUNTS	%/100 Volts
705	2	
735	0	
765	0	+66.67
795	0	>100
825	3	+83.33
855	0	-83.33
885	1	>100
915	0	>100
945	1	>100
975	3	>100
1005	34	>100
1035	190	>100
1065	725	>100
1095	1724	>100
1125	2937	>100
1155	4543	>100
1185	6429	>100
1215	8789	+94.33
1245	11443	+85.00
1275	15155	+78.33
1305	18669	+72.76
1335	23370	+64.55
1365	28550	+55.91
1395	33260	+43.78
1425	37418	+31.11
1455	40334	+20.16
1485	41951	+12.02
1515	42838	+6.74
1545	43602	+3.50
1575	43809	+1.61
1605	43735	+0.82
1635	43823	+1.13
1665	44134	+1.17
1695	44358	+1.41
1725	44239	+1.42
1755	44705	+1.95
1785	44909	+2.35
1815	45328	+2.52
1845	45509	
1875	46116	

Plateau 07/18/05 Instrument 4 MPC 9604 Detector B 7/18/2005

Alpha Volts: 705 Beta Volts: 1575



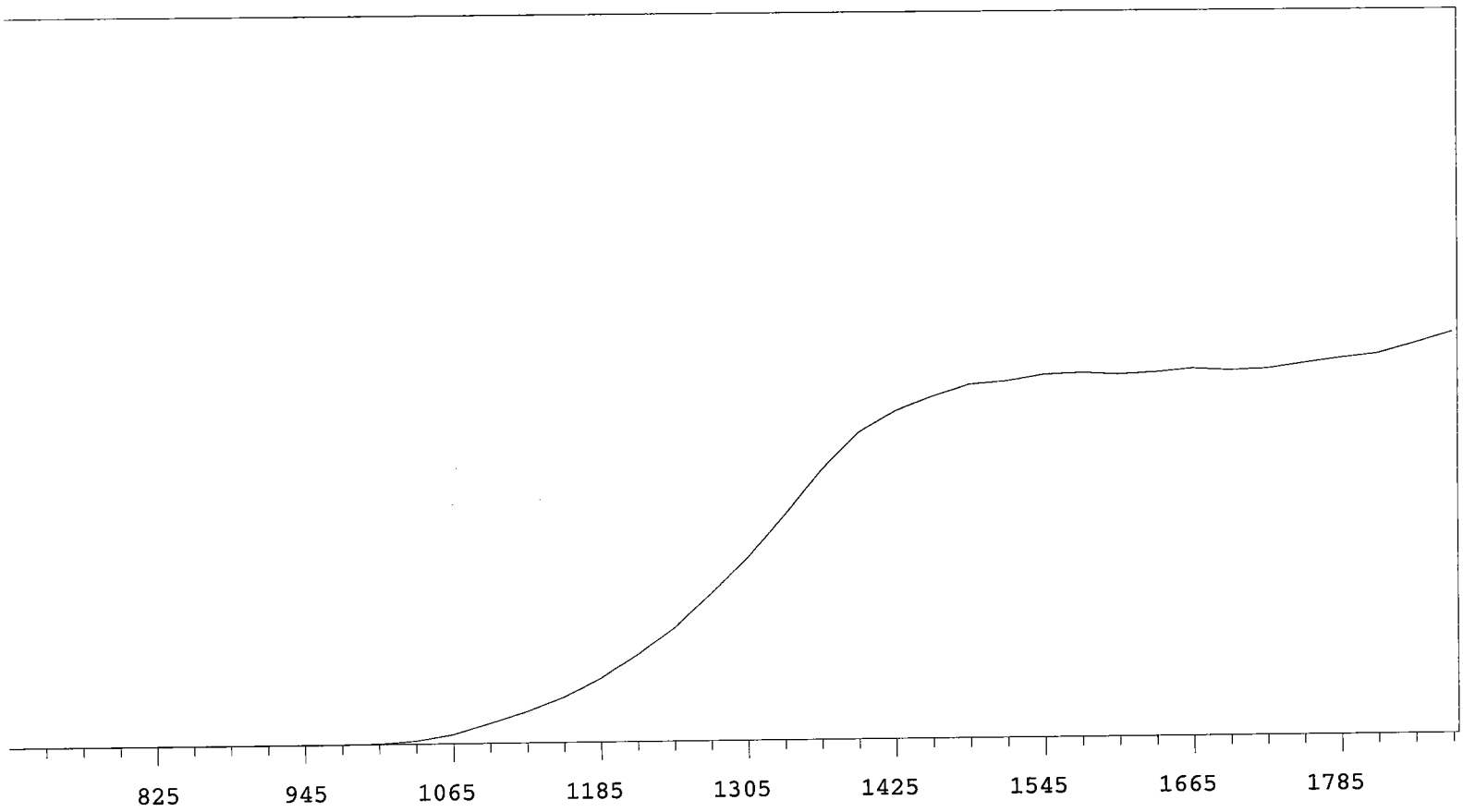
VOLTS	COUNTS	%/100 Volts
705	3	
735	2	
765	1	-66.67
795	4	+45.45
825	0	+30.30
855	4	+0.00
885	2	>100
915	3	>100
945	6	>100
975	42	>100
1005	244	>100
1035	697	>100
1065	1429	>100
1095	2487	>100
1125	3483	>100
1155	4980	>100
1185	6683	+92.69
1215	8988	+84.24
1245	11345	+76.74
1275	14366	+68.74

VOLTS	COUNTS	%/100 Volts
1305	17564	+61.34
1335	20983	+50.92
1365	24340	+39.30
1395	26885	+26.88
1425	28563	+15.81
1455	29365	+8.25
1485	29683	+3.89
1515	29898	+2.00
1545	30019	+1.51
1575	30093	+1.01
1605	30263	+1.18
1635	30232	+1.46
1665	30485	+1.36
1695	30648	+1.63
1725	30678	+1.10
1755	30883	+2.70
1785	30876	+2.89
1815	31805	+4.51
1845	31569	
1875	32673	

7/29/05

Plateau 07/18/05 Instrument 4 MPC 9604 Detector C 7/18/2005

Alpha Volts: 705 Beta Volts: 1575

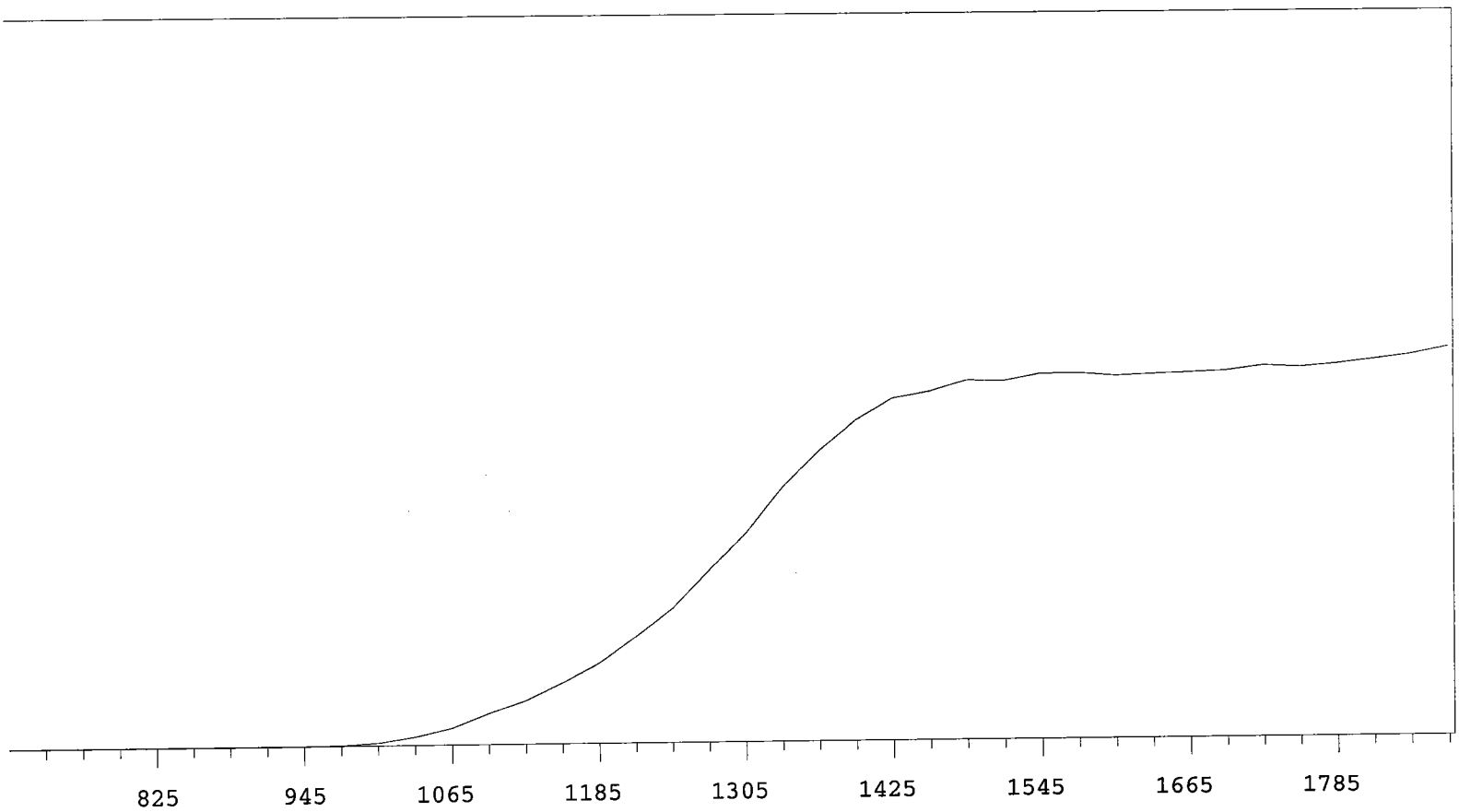


VOLTS	COUNTS	%/100 Volts
705	1	
735	0	
765	0	
795	0	>100
825	2	>100
855	0	+100.00
885	1	>100
915	2	>100
945	4	>100
975	10	>100
1005	53	>100
1035	327	>100
1065	902	>100
1095	1970	>100
1125	3079	>100
1155	4435	>100
1185	6202	+99.16
1215	8385	+91.20
1245	10930	+83.12
1275	14132	+75.94

VOLTS	COUNTS	%/100 Volts
1305	17606	+68.88
1335	21599	+59.41
1365	25809	+47.05
1395	29372	+33.37
1425	31486	+21.76
1455	32894	+12.91
1485	34077	+8.33
1515	34357	+5.14
1545	34948	+2.35
1575	35100	+1.39
1605	34930	+0.94
1635	35093	+0.78
1665	35444	+1.03
1695	35257	+1.49
1725	35393	+2.34
1755	35908	+3.77
1785	36373	+5.15
1815	36800	+6.47
1845	37764	
1875	38815	

Plateau 07/18/05 Instrument 4 MPC 9604 Detector D 7/18/2005

Alpha Volts: 705 Beta Volts: 1575



VOLTS	COUNTS	%/100 Volts
705	4	
735	3	
765	1	
795	1	>100
825	0	>100
855	1	>100
885	5	>100
915	3	>100
945	14	>100
975	77	>100
1005	298	>100
1035	932	>100
1065	1829	>100
1095	3311	>100
1125	4603	>100
1155	6424	+96.24
1185	8451	+88.86
1215	11201	+83.16
1245	14170	+76.31
1275	18128	+69.83

VOLTS	COUNTS	%/100 Volts
1305	21893	+61.23
1335	26615	+50.22
1365	30345	+39.18
1395	33570	+25.90
1425	35845	+16.79
1455	36520	+8.95
1485	37628	+5.26
1515	37539	+3.72
1545	38268	+1.30
1575	38301	+0.80
1605	37985	-0.13
1635	38135	+0.48
1665	38276	+1.84
1695	38429	+1.51
1725	38899	+1.48
1755	38695	+1.85
1785	39003	+2.37
1815	39457	+4.14
1845	39914	
1875	40696	

7/29/05

Pb-210 WATER

Batch : CALVER
Analyst : JMJ
Date : 7/28/2005
Required MDA : 5.00 pCi/L
Bkg Count Time : 500 min

Procedure Code : GFC__PBL
Parmname : Lead-210
Batch Counted On : PIC
Lead Carrier Weight : 14.65 mg/mL

Sample ID	Sample Aliquot L	Sample Date/Time	Prep Date	Carrier Weight mg	Bi-210 Start Time	Bi-210 Ingrowth Factor	Detector Number#	Count Time min
V1	1.000	7/14/2005 0:00	7/14/2005	1.30	7/14/2005 8:00	0.858	1A	10
V2	1.000	7/14/2005 0:00	7/14/2005	2.10	7/14/2005 8:00	0.858	1B	10
V3	1.000	7/14/2005 0:00	7/14/2005	3.60	7/14/2005 8:00	0.858	1C	10
V4	1.000	7/14/2005 0:00	7/14/2005	5.00	7/14/2005 8:00	0.858	1D	10
V5	1.000	7/14/2005 0:00	7/14/2005	7.00	7/14/2005 8:00	0.858	2A	10
V6	1.000	7/14/2005 0:00	7/14/2005	8.80	7/14/2005 8:00	0.858	2B	10
V7	1.000	7/14/2005 0:00	7/14/2005	11.70	7/14/2005 8:00	0.858	2C	10
V8	1.000	7/14/2005 0:00	7/14/2005	13.40	7/14/2005 8:00	0.858	2D	10
V9	1.000	7/14/2005 0:00	7/14/2005	12.90	7/14/2005 8:00	0.858	3A	10
V10	1.000	7/14/2005 0:00	7/14/2005	15.30	7/14/2005 8:00	0.858	3B	10
V11	1.000	7/14/2005 0:00	7/14/2005	15.70	7/14/2005 8:00	0.858	3C	10
V12	1.000	7/14/2005 0:00	7/14/2005	19.80	7/14/2005 8:00	0.858	3D	10
V1	1.000	7/14/2005 0:00	7/14/2005	1.30	7/14/2005 8:00	0.858	4A	10
V2	1.000	7/14/2005 0:00	7/14/2005	2.10	7/14/2005 8:00	0.858	4B	10
V3	1.000	7/14/2005 0:00	7/14/2005	3.60	7/14/2005 8:00	0.858	4C	10
V4	1.000	7/14/2005 0:00	7/14/2005	5.00	7/14/2005 8:00	0.858	4D	10

Pb-210 0.1 ML
ET491-A **80900.6** DPM
3644.17 pCi/L

Total Beta Counts	Raw cpm	Detector Efficiency dec	BKG cpm	Counted Time	Sample Decay Factor	Test Rec. dec	Pb-210 MDA pCi/L	**Pb-210 RESULT pCi/L**	Pb-210 Recovery (%)
22806	2280.60	0.4191	0.362	7/28/2005 10:51	0.999	0.8874	1.636	3223.022	**88.44%**
23555	2355.50	0.4061	0.296	7/28/2005 10:51	0.999	0.7167	1.937	4252.948	**116.71%**
25567	2556.70	0.3977	0.36	7/28/2005 10:51	0.999	0.8191	1.864	4124.728	**113.19%**
23587	2358.70	0.3846	0.338	7/28/2005 10:51	0.999	0.8532	1.806	3777.228	**103.65%**
26230	2623.00	0.3682	0.348	7/28/2005 10:52	0.999	0.9556	1.703	3917.583	**107.50%**
25997	2599.70	0.3528	0.386	7/28/2005 10:52	0.999	1.0011	1.766	3868.023	**106.14%**
26435	2643.50	0.3237	0.42	7/28/2005 10:52	0.999	1.1409	1.745	3762.025	**103.23%**
26101	2610.10	0.3139	0.414	7/28/2005 10:52	0.999	1.1433	1.786	3822.424	**104.89%**
22288	2228.80	0.3046	0.32	7/28/2005 10:52	0.999	0.9784	1.948	3930.475	**107.86%**
24112	2411.20	0.2889	0.366	7/28/2005 10:52	0.999	1.0444	2.025	4199.302	**115.23%**
22831	2283.10	0.2864	0.402	7/28/2005 10:52	0.999	0.9742	2.271	4300.541	**118.01%**
21369	2136.90	0.2483	0.384	7/28/2005 10:53	0.999	1.0396	2.411	4349.436	**119.35%**
22530	2253.00	0.4156	0.334	7/28/2005 11:09	0.999	0.8874	1.600	3210.006	**88.09%**
24318	2431.80	0.4129	0.32	7/28/2005 11:09	0.999	0.7167	1.961	4317.153	**118.47%**
25689	2568.90	0.3967	0.35	7/28/2005 11:09	0.999	0.8191	1.848	4153.294	**113.97%**
23412	2341.20	0.3802	0.394	7/28/2005 11:09	0.999	0.8532	1.937	3791.786	**104.05%**

INSTR_ID	SAMPLE_ID	CNT_TIME	A	B	TIME	USER2
Instrument 1 - A	1	10	112	22806	7/28/2005 10:51	1575
Instrument 1 - B	2	10	88	23555	7/28/2005 10:51	1575
Instrument 1 - C	3	10	212	25567	7/28/2005 10:51	1575
Instrument 1 - D	4	10	331	23587	7/28/2005 10:51	1575
Instrument 2 - A	5	10	310	26230	7/28/2005 10:52	1575
Instrument 2 - B	6	10	14	25997	7/28/2005 10:52	1575
Instrument 2 - C	7	10	357	26435	7/28/2005 10:52	1575
Instrument 2 - D	8	10	314	26101	7/28/2005 10:52	1575
Instrument 3 - A	9	10	192	22288	7/28/2005 10:52	1575
Instrument 3 - B	10	10	240	24112	7/28/2005 10:52	1575
Instrument 3 - C	11	10	308	22831	7/28/2005 10:52	1575
Instrument 3 - D	12	10	276	21369	7/28/2005 10:53	1575
Instrument 4 - A	1	10	183	22530	7/28/2005 11:09	1575
Instrument 4 - B	2	10	30	24318	7/28/2005 11:09	1575
Instrument 4 - C	3	10	273	25689	7/28/2005 11:09	1575
Instrument 4 - D	4	10	602	23412	7/28/2005 11:09	1575

General Engineering Laboratories
Verification Source Preparation Sheet

Applicable SOP Number: GL-RAD-A-018

Isotope: Pb-210

Date Standards Prepared: 7/14/05

Cocktail Type Used: N/A

Standard ID: ET491-A

Matrix of Vial/Planchett: Lead chromate precipitate on Tuffryn filter

Amount Used (g or (ml)): 0.1

Standard Activity (DPM/g or (mL)): 112301.8

Type of Scintillation Vial: N/A

Reference Date: 1/1/95

Pipette ID Used: 1429303

Expiration Date: 11/1/05

Balance ID Used: n/a

Residue/Carrier Agent: Lead Carrier 14.65 mg/mL

Quenching Agent: N/A

Separation Date/Time: 7/14/05 0800

	Standard Number	Quenching Vol (uL)/ Residue Volume(mL)	Initial Wt. (g)	Final Wt. (g)	Net Wt. (mg)	
	V1	0.1	0.0839	~~0.0843~~	~~0.4~~ 0.0852	1.3
	V2	0.2	0.0841	~~0.0856~~	~~1.5~~ 0.0862	2.1
	V3	0.3	0.0840	0.0876	3.6	
	V4	0.4	0.0856	0.0906	5.0	
	V5	0.5	0.0846	0.0916	7.0	
	V6	0.6	0.0844	0.0932	8.8	
	V7	0.7	0.0839	0.0956	11.7	
	V8	0.8	0.0859	0.0993	13.4	
	V9	0.9	0.0879	0.1008	12.9	
	V10	1.0	0.0844	0.0997	15.3	
	V11	1.1	0.0867	0.1024	13.7	
	V12	1.3	0.0840	0.1038	19.8	

7/21/05

Prepared By: _____ Date: 7/28/05

Reviewed By: _____ Date: 7/30/05

Rev 1 RLM 9/10/97

DEUTSCHER KALIBRIERDIENST (DKD)

Kalibrierlaboratorium für Meßgrößen der Radioaktivität
Calibration laboratory for measurements of radioactivity
AKKREDITIERT DURCH DIE PHYSIKALISCH-TECHNISCHE BUNDESANSTALT (PTB)

Amersham Buchler GmbH & Co KG
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Telefon (05307) 930-0
Telefax (05307) 930-293
Telefax-Zentrale 930-237

02628
DKD-K-06501
95-10

Kalibrierschein
Calibration Certificate

Kalibrierzeichen
Calibration mark

Gegenstand *Object*	Radioactive Reference Solution
Hersteller *Manufacturer*	Amersham Buchler GmbH & Co KG Postfach 11 49 Gieselweg 1 D-38001 Braunschweig D-38110 Braunschweig
Typ *Type*	RBZB44
Strahler-Nr. *Source number*	ET 491
Auftraggeber *Customer*	Amersham Corporation 2636 S. Clearbrook Drive Arlington Heights, IL 60005 USA-Arlington Heights, IL
Auftragsnummer *Work order number*	112116
Anzahl der Seiten des Kalibrierscheines *Number of pages of the certificate*	2
Referenzdatum *Reference date*	1 January 1995

Der Deutsche Kalibrierdienst ist Unterzeichner des multilateralen Übereinkommens der Western European Calibration Cooperation (WECC) zur gegenseitigen Anerkennung der Kalibrierscheine.
Die Kalibrierung erfolgt auf der Grundlage des zwischen der Physikalisch-Technischen Bundesanstalt und dem Träger abgeschlossenen Vertrages.
Dieser Kalibrierschein dokumentiert die Rückführbarkeit auf nationale Normale zur Darstellung der physikalischen Einheiten in Übereinstimmung mit dem Internationalen Einheitensystem (SI).
Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.
The Deutscher Kalibrierdienst is signatory to the multilateral agreement of the Western European Calibration Cooperation (WECC) for the mutual recognition of calibration certificates.
The calibration is performed according to the stipulations of the contract between the Physikalisch-Technische Bundesanstalt and the holder of the calibration laboratory.
This calibration certificate documents the traceability to national standards, which realize the physical units of measurement according to the International System of Units (SI).
The user is obliged to have the object recalibrated at appropriate intervals.

Stempel Seal	Datum Date	Leiter des Kalibrierlaboratoriums Head of the calibration laboratory	Stellvertreter Deputy	Bearbeiter Person responsible
Deutscher Kalibrierdienst DKD-K-06501	18 October 1995	Dr. Dornhöfer	Dr. Thieme	E. Schuler

PC-5-013-4

Amersham

DEUTSCHER KALIBRIERDIENST (DKD)

02628
DKD-K-06501
95-10

Radioactive Reference Solution

Solution No.:	ET 491
Drawing No.:	VZ-2058
Nuclide:	Lead-210
Radioactive concentration:	38.1 kBq/g
Reference date:	1 January 1995 at 12.00 GMT
Mass of solution:	(5.182 ± 0.001) g
Volume of solution:	approx. 5 ml
Chemical composition:	Solution in 1.2 M HNO3 Carrier: Pb (NO3)2, Bi (NO3)3; each 20 mg/l of the corresponding element.
Measuring method:	The activity was determined by comparision with a reference solution by measurement with a Ge-detector with MCA.
Traceability:	Additional to the direct traceability to the PTB through the DKD this product satisfies the quality assurance requirements of USNRC Regulatory Guide 4.15 Revision 1, February 1979, for achieving NIST traceability through Amersham's participation in the NEI-NIST Measurements Assurance Program of the Nuclear Power Industry.
Uncertainty:	The relative uncertainty of the activity is ± 3 %. The declared uncertainty U is an expanded uncertainty $U = k * u_c$ with a coverage factor of $k = 3$. The combined uncertainty u_c is the sum of all uncertainties which can be evaluated by statistical means (uncertainty type A, u_A) and all other uncertainties (uncertainty type B, u_B) whereby $u_c^2 = u_A^2 + u_B^2$. (Ref.: NIST Technical Note 1297 / WECC-Doc. 19-1990)
Radioactive impurities:	Related to Pb-210 (equal 100 %) the following radioactive impurities were detected: Ra-226: 0.003 %

Deutscher DKD-K- 06501 Kalibrierdienst

LC-5-013-47

Amersham
The Health Science Group

Amersham Corporation
2636 S. Clearbrook Drive
Arlington Heights, IL 60005
tel (708) 593-6300
fax (708) 593-8091

Amersham

TRACEABILITY TO NIST

Traceability is the ability to relate the accuracy of measurement of radionuclides to the National Institute of Standards and Technology (NIST). Traceability is achieved by participation in a Measurements Assurance Program linked to NIST and production of certified materials in accordance with a quality assurance program.

Amersham participates in measurement assurance programs conducted by NIST in cooperation with the Nuclear Energy Institute (NEI, formerly USCEA). Additionally, our production facilities and measurement laboratories operate under routinely audited quality assurance programs.

Therefore, Amersham certified standardized products meet or exceed, the NRC requirements for measurements traceable to NIST.

278004C

7/22/96

RC-5-013-4B

Standard Traceability Log Rad

Source Material Info	
Parent Code:	ET491
Prepared By:	Garret Ray
Carrier Conc:	1.2M HNO3
Reference Date:	01/01/1995
Ampoule Mass (g):	5.182 g
Uncertainty:	+/- 3 %
LogBook No:	RC S 014 004

A Solution Material Info	
Isotope:	Lead-210
Prepared By:	Garret Ray
Prep Date:	03/01/1996
Verification Date:	07/12/2005
Expiration Date:	07/12/2006
Primary Code:	ET491-A
Dilution(mL):	100 mL
Mass of Parent(g):	5.0547 g
Density(g/mL):	1.0000

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (kBq/g)) * (conversion dpm to kBq) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (kBq/g)) * (conversion dpm to kBq) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(5.0547 g) * (38.1 kBq/g) * (60000 dpm/kBq) / (100 mL) = 115550.4420 dpm/mL
(5.0547 g) * (38.1 kBq/g) * (60000 dpm/kBq) / (1.0000 g/mL) / (100 mL) = 115550.4420 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
10/20/1997	Richard Kinney	.467	100	ET491-B	524.45 dpm/ml	03/01/1997	03/01/1998
10/29/1997	Richard Kinney	3.0992	500	ET491-C	696.09 dpm/mL	10/29/1998	10/29/1999
04/03/2001	Angela Albee	.5184	100	ET491-D	582.17 dpm/mL	04/16/2003	04/16/2004
09/15/2003	Angela Albee	.5132	100	ET491-E	576.33 dpm/mL	11/11/2004	11/11/2005

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

7/29/05

Verification for Pb-210 Standard ET491-A

A. Fehr
7/12/2005

	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff	Standard Mass. Used (g)	Source DPM/~~mL~~ g
	ET491-E N1	22785.6000	20.2000	22785.6000	2.63365	0.1038	83349.97114
	ET491-E N2	22178.6000	20.2000	22178.6000	2.63365	0.1033	81522.24763
	ET491-E N3	22065.7000	20.2000	22065.7000	2.63365	0.1031	81264.5963
						Average =	82045.60502
Mean Value (Counting) =	82045.60502		**101.400909**	**Pass**			
Stdev =	1136.936355		0.01385737	**Rule 3 (Pass/Fail)**			
Certificate Value =	80912.1						
Lower Limit =	79771.73231						
Upper Limit =	84319.47773						
Rule 1 Pass/Fail	**Pass**						
Two sigma =	2273.872711						
10 % of Mean =	8204.560502						
Rule 2 (Pass/Fail)	**Pass**						

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three calibration sources for source ET491-A by transferring 0.1 mL portions of the standard to glass liquid scintillation vials. Ten mL of Ready Gel liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 1 mL of DI water and 10 mL of Ready Gel cocktail. The calibration vials and background source were dark adapted for two hours and counted on LSC Yellow (Wallac) using Protocol 31 for Pb-210 standard verification. The efficiency calibration which was used for verification calculations was performed on 7/12/05 using source 0356-A (Pb-210). Each verification source calculation was performed as follows:

Source dpm/g = (A - B)/(C)(D)
where:
A = Ver. source cpm,
B = BKG cpm,
C = System efficiency, (cpm/dpm), and
D = mass used for standard verification.

Reference RAD SOP M-001

7/29/05

Angela A. Johnson 7/29/05

PROTOCOL	: 31 Pb-210 Verification
DATE	: 2005/07/12
TIME	: 05:29
ID	: P31AS005

Wallac 1414 WinSpectral v1.40 S/N 4140127

Counting mode	: CPM
Isotope(s)	: Pb210
Pb210 =	5- 520,21.00 y
Protocol name	: Pb-210 Verification
Counting time	: 300
Repeats	: 1
Cycles	: 1
Replicates	: 1
2 sigma %	: 0.01
Minimum cpm	: 0.00 Checking time: 10
Advanced modes	: Chemilum,PSA
PSA level	: 35
Output to Display	:
POS,CTIME,DATE,TIME,RACKPOS,CPMw1,CPM,SQPI,CPM1	
Additions to Display	: Spectrum,Header,Listing
Spectrum	: Alpha,Beta
Window 1	: 685- 745 /Alpha
Window 2	: 1-1024 /Beta
Window 3	: 1-1024 /Beta
Window 4	: 1-1024 /Beta
Window 5	: 1-1024 /Beta
Window 6	: 1-1024 /Beta
FNCT1 = FNCT1	:
FNCT2 = FNCT2	:
FNCT3 = FNCT3	:
FNCT4 = FNCT4	:

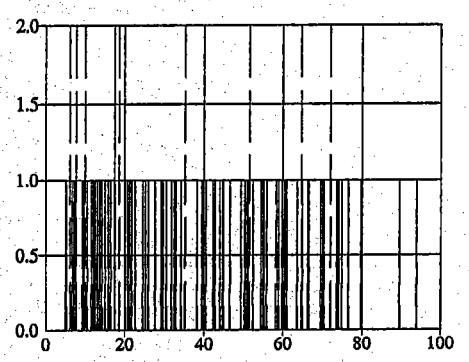
Total count rate:

Pb210 72372.3 CPM

7/12/05

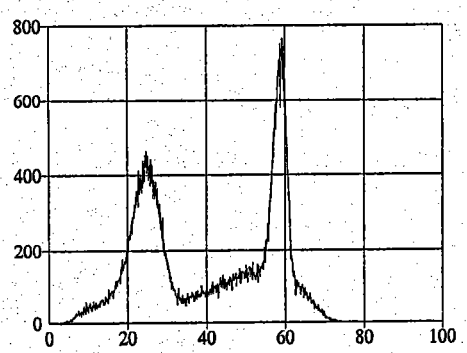
7/29/05

POS	CTIME	DATE	TIME	RACKPOS	CPM
1	300	7/12/2005	5:29 AM	1	20.20



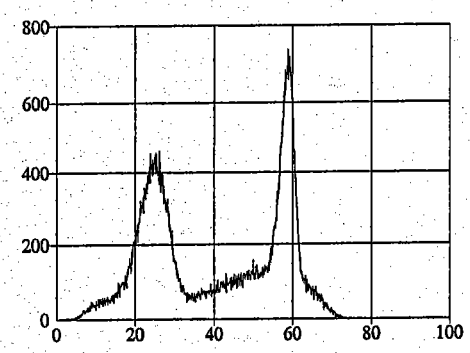
Bkg

2	300	7/12/2005	5:35 AM	2	22785.60



ET491-A

3	300	7/12/2005	5:41 AM	3	22178.60

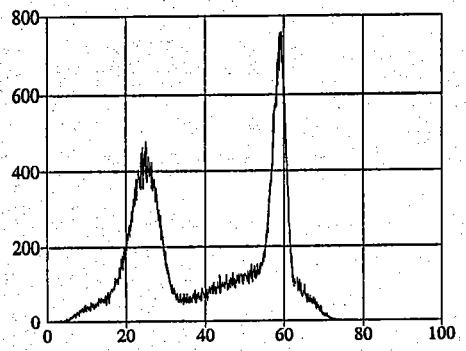


ET491-A

ALF 7/12/05

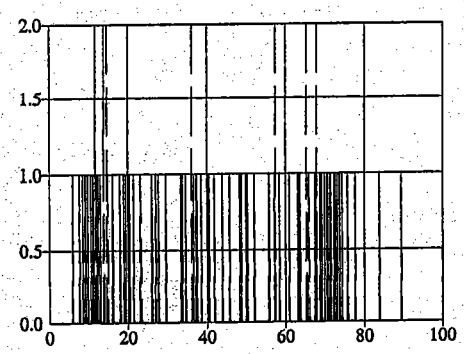
7/12/05 7/29/05

POS	CTIME	DATE	TIME	RACKPOS	CPM
4	300	7/12/2005	5:46 AM	4	22065.70



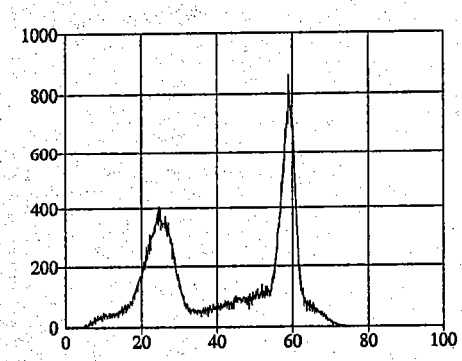
ET491-A

5	300	7/12/2005	5:52 AM	5	21.70



Bkg

6	300	7/12/2005	5:58 AM	6	20294.00

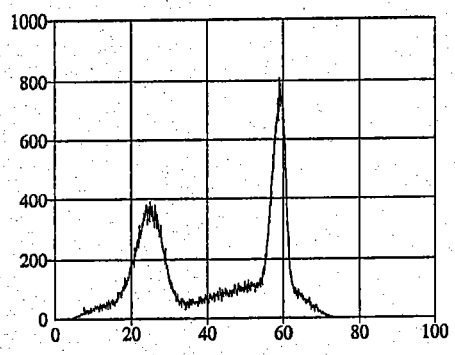


0356-A

AUF7112105

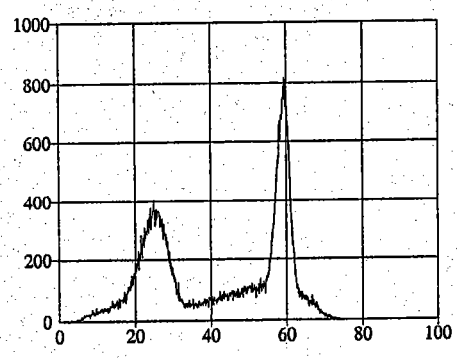
7/29/05

POS	CTIME	DATE	TIME	RACKPOS	CPM
7	300	7/12/2005	6:04 AM	7	20276.60



0356-A

8	300	7/12/2005	6:09 AM	8	20079.70



0356-A

ALF 7/12/05

7/14

AD 7/29/05

Alpha Spectroscopy Calibration Sources

The following is a summary of the procedure performed for preparing mixed alpha calibration standards:

A calibration stock solution was prepared by combining the following in a volumetric flask and diluting to 50 ml (51.4561 grams). These individual standards were first verified by direct precipitation of small aliquots of each standard (as described in Attachment I).

Isotope	Serial #	amount used (g)	dpm (note 1)
Gd-148	64445-278	0.2471	212.159287
Np-237	4341	1.8075	204.438594
Cm-244	4320A	7.2704	240.144737

Note 1: Dpm values are decay corrected to 2/7/2003.

Forty one weighted aliquots were then directly precipitated using Neodymium Flouride /HF system. The sources were then mounted on 0.1Poly-proplyene filters and taped securely to 1 inch stainless steel planchettes for counting in an Alpha Spectroscopy system. The liquid fraction that passes through the filter is collected, traced with Am-241 and prepared for counting using the identical procedure. These samples are counted to ensure there is no more than 1% loss in the filtering processes. All sources pass this requirement. The DPM information for each source is listed in attachment II.

Certificate files were then created on the Alpha system used for acquisition and processing of data. Each source is assigned a name (AESS-001 through AESS-041). The information for the source activities is entered into the certificate files appropriate for the detector being used.
For example: If source AESS-001 is used for calibrating detector 25, the source data is entered into the certificate file name [env_alpha.cer]U025.cer.
The computer software uses these certificate files to calculate an energy calibration and determine the efficiency of the detector after counting the source.

4/1/03

2002 Alpha Eff Source Stock Verification

Curium-244

Isotope	Value pCi/g		
SSTOCK2002A2_AM	106.000		
SSTOCK2002B2_AM	106.000		
SSTOCK2002C2_AM	106.000		
Mean Value (Counting) =	106.000	98.04%	
Stdev =	0		
Target =	108.1230	pCi/g	
Lower Limit =	106		
Upper Limit =	106		
Rule 1 Pass/Fail	Pass	Pass	① PASS ~~Fail~~
Two sigma =	0		
10 % of Mean =	10.6		
Rule 2 (Pass/Fail)	Pass		

Neptunium-237

Isotope	Value pCi/g		
SSTOCK2002A2_AM	90.100		
SSTOCK2002B2_AM	87.200		
SSTOCK2002C2_AM	93.500		
Mean Value (Counting) =	90.267	98.02%	
Stdev =	3.153305144		
Target =	92.0900	pCi/g	
Lower Limit =	83.96005638		
Upper Limit =	96.57327696		
Rule 1 Pass/Fail	Pass	Pass	Pass
Two sigma =	6.306610289		
10 % of Mean =	9.026666667		
Rule 2 (Pass/Fail)	Pass		

Gadolinium-148

Isotope	Value pCi/g		
SSTOCK2002A2_AM	96.080		
SSTOCK2002B2_AM	93.750		
SSTOCK2002C2_AM	96.560		
Mean Value (Counting) =	95.463	99.81%	
Stdev =	1.503074627		
Target =	95.6460	pCi/g	
Lower Limit =	92.45718408		
Upper Limit =	98.46948259		
Rule 1 Pass/Fail	Pass	Pass	Pass
Two sigma =	3.006149253		
10 % of Mean =	9.546333333		
Rule 2 (Pass/Fail)	Pass		

The analyst prepared three standard verification sources for the mixed alpha stock standard using 0.1030 g for source #1, 0.1035 g for source #2 and 0.1028 g for source #3. Each standard was combined with 1.0 mL of Am-243 standard 0454-A and 0.1 mL of Nd carrier in a disposable centrifuge tube. Four mL of 2 M HCl was added to each standard and then diluted with 4 mL of DI water. 5 mL of ascorbic acid was added to each sample then one mL of 48% HF was added to precipitate Nd(and Curium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. pCi/L values for the Mixed Alpha Stock were calculated and compared to Am-243 certified values.

① The rule failed because the 3 results from 3 sources were the same. Therefore, the std dev was zero. The intent of this rule is to ensure an appropriate amount of counts are achieved for proper determination. ~~Forea~~ For each standard the # of counts achieved was just under 10000 which has a counting error of nearly 1%. Because the standard's bias is < 2% from the known value the standard is acceptable.

[signature] 021203

Mixed alpha Reference date = 2/7/2003

Isotope	Source	Stock Dpm/g	Reference date	Half-life (years)	amount used for mixed	Dpm/g mixed	Decay corr dpm/g
Gd-148	64445-278 (0502)	44354.59289	9/5/2002	74.60	0.2471	212.9974853	212.159287
Np-237	Srm 4341 (0493)	5820	3/1/1992	2.14E+06	1.8075	204.4393182	204.438594
Cm-244	SRM 4320a (0490)	2223.6	2/1/1996	18.1	7.2704	314.1796879	240.144737

Source	Amount of standard used	dpm Gd-148	dpm Np-237	dpm Cm-244	dps Gd-148	dps Np-237	dps Cm-244
AESS-001	1.0362	219.839	211.839	248.838	3.664	3.531	4.147
AESS-002	1.0344	219.458	211.471	248.406	3.658	3.525	4.140
AESS-003	1.034	219.373	211.390	248.310	3.656	3.523	4.138
AESS-004	1.0331	219.182	211.206	248.094	3.653	3.520	4.135
AESS-005	1.0353	219.649	211.655	248.622	3.661	3.528	4.144
AESS-006	1.0331	219.182	211.206	248.094	3.653	3.520	4.135
AESS-007	1.0348	219.542	211.553	248.502	3.659	3.526	4.142
AESS-008	1.0363	219.861	211.860	248.862	3.664	3.531	4.148
AESS-009	1.0352	219.627	211.635	248.598	3.660	3.527	4.143
AESS-010	1.0346	219.500	211.512	248.454	3.658	3.525	4.141
AESS-011	1.0353	219.649	211.655	248.622	3.661	3.528	4.144
AESS-012	1.0367	219.946	211.941	248.958	3.666	3.532	4.149
AESS-013	1.0396	220.561	212.534	249.654	3.676	3.542	4.161
AESS-014	1.0368	219.967	211.962	248.982	3.666	3.533	4.150
AESS-015	1.0363	219.861	211.860	248.862	3.664	3.531	4.148
AESS-016	1.0353	219.649	211.655	248.622	3.661	3.528	4.144
AESS-017	1.0356	219.712	211.717	248.694	3.662	3.529	4.145
AESS-018	1.0359	219.776	211.778	248.766	3.663	3.530	4.146
AESS-019	1.0349	219.564	211.574	248.526	3.659	3.526	4.142
AESS-020	1.0361	219.818	211.819	248.814	3.664	3.530	4.147
AESS-021	1.0348	219.542	211.553	248.502	3.659	3.526	4.142
AESS-022	1.0353	219.649	211.655	248.622	3.661	3.528	4.144
AESS-023	1.0353	219.649	211.655	248.622	3.661	3.528	4.144
AESS-024	1.0343	219.436	211.451	248.382	3.657	3.524	4.140
AESS-025	1.0364	219.882	211.880	248.886	3.665	3.531	4.148
AESS-026	1.0336	219.288	211.308	248.214	3.655	3.522	4.137
AESS-027	1.0353	219.649	211.655	248.622	3.661	3.528	4.144
AESS-028	1.0366	219.924	211.921	248.934	3.665	3.532	4.149

AESS-029	1.0355	219.691	211.696	248.670	3.662	3.528	4.144
AESS-030	1.0349	219.564	211.574	248.526	3.659	3.526	4.142
AESS-031	1.0343	219.436	211.451	248.382	3.657	3.524	4.140
AESS-032	1.0326	219.076	211.103	247.973	3.651	3.518	4.133
AESS-033	1.0308	218.694	210.735	247.541	3.645	3.512	4.126
AESS-034	1.0314	218.821	210.858	247.685	3.647	3.514	4.128
AESS-035	1.0303	218.588	210.633	247.421	3.643	3.511	4.124
AESS-036	1.0343	219.436	211.451	248.382	3.657	3.524	4.140
AESS-037	1.0353	219.649	211.655	248.622	3.661	3.528	4.144
AESS-038	1.0373	220.073	212.064	249.102	3.668	3.534	4.152
AESS-039	1.0334	219.245	211.267	248.166	3.654	3.521	4.136
AESS-040	1.0346	219.500	211.512	248.454	3.658	3.525	4.141
AESS-041	1.0352	219.627	211.635	248.598	3.660	3.527	4.143

0490
0491

National Institute of Standards & Technology

Certificate

Standard Reference Material 4320A
Curium-244 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive curium-244 nitrate and nitric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of alpha-particle counting instruments and for the monitoring of radiochemical procedures.

Radiological Hazard

The SRM ampoule contains curium-244 with a total activity of approximately 200 Bq. Curium-244 decays by alpha-particle emission to plutonium-240, which also decays by alpha-particle emission. None of the alpha particles escape from the SRM ampoule. During the decay process X-rays and gamma rays with energies from 40 keV to 1100 keV are also emitted. Most of these photons escape from the SRM ampoule but their intensities are so small that they do not represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]*. The SRM should be used only by persons qualified to handle radioactive material.

Chemical Hazard

The SRM ampoule contains nitric acid (HNO_3) with a concentration of 1 mole per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least February 2006.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899
February 1996 (Text only revised November 1997)

Thomas E. Gills, Chief
Standard Reference Materials Program

*Notes and references are on pages 5 and 6

Recommended Procedure for Opening the SRM Ampoule

1) If the SRM solution is to be diluted, it is recommended that the diluting solution have a composition comparable to that of the SRM solution.

2) Wear eye protection, gloves, and protective clothing and work over a tray with absorbent paper in it. Work in a fume hood. In addition to the radioactive material, the solution contains strong acid and is corrosive.

3) Shake the ampoule to wet all of the inside surface of the ampoule. Return the ampoule to the upright position.

4) Check that all of the liquid has drained out of the neck of the ampoule. If necessary, gently tap the neck to speed the process.

5) Holding the ampoule upright, score the narrowest part of the neck with a scribe or diamond pencil.

6) Lightly wet the scored line. This reduces the crack propagation velocity and makes for a cleaner break.

7) Hold the ampoule upright with a paper towel, a wiper, or a support jig. Position the scored line away from you. Using a paper towel or wiper to avoid contamination, snap off the top of the ampoule by pressing the narrowest part of the neck away from you while pulling the tip of the ampoule towards you.

8) Transfer the solution from the ampoule using a pycnometer or a pipet with dispenser handle. NEVER PIPETTE BY MOUTH.

9) Seal any unused SRM solution in a flame-sealed glass ampoule, if possible, to minimize the evaporation loss.

See also reference [4]*.

*Notes and references are on pages 5 and 6.

PROPERTIES OF SRM 4320A
(Certified values are shown in bold type)

Source identification number	NIST SRM 4320A		
Physical Properties:			
Source description	Liquid in flame-sealed NIST borosilicate-glass ampoule		
Ampoule specifications	Body outside diameter Wall Thickness Barium content Lead-oxide content Other heavy elements	(16.5 ± 0.5) mm (0.60 ± 0.04) mm Less than 2.5% Less than 0.02% Trace quantities	
Solution density	**(1.030 ± 0.002) g·mL^{-1} at 22.8 °C** [b]*		
Solution mass	Approximately 5.15 g		
Chemical Properties:			
Solution composition	Chemical Formula	Concentration (mol·L^{-1})	Mass Fraction (g·g^{-1})
	H_2O HNO_3 HCl $^{244}Cm^{+3}$	54 1.0 <0.001 5×10^{-11}	0.94 0.06 $<4 \times 10^{-5}$ 1×10^{-11}
Radiological Properties:			
Radionuclide	**Curium-244**		
Reference time	**1200 EST, 1 February 1996** [c]		
Massic activity of the solution [d]	**37.06 Bq·g^{-1}** 74.12 Bq·g^{-1}		
Relative expanded uncertainty (k=2)	**0.68%** [e] [f]		
Alpha-particle-emitting daughters Alpha-particle-emitting impurities	Plutonium-240: (0.22 ± 0.11) Bq·g^{-1} [b] [c] Curium-243: (0.005 ± 0.004) Bq·g^{-1} [b] [g]		
Photon-emitting impurities	None detected [h]		
Half lives used in the decay corrections	Curium-244: (18.10 ± 0.02) a [i] Plutonium-240: (6563 ± 7) a [i]		
Calibration method	Two 4πα liquid-scintillation counting systems		

37.06 x 2 2004

6

*Notes and references are on pages 5 and 6.

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[i] The stated uncertainty is the standard uncertainty. See reference [5].

[j] Relative standard uncertainty of the input quantity x_i.

[k] The relative change in the output quantity y divided by the relative change in the input quantity x_i. If $|\partial y/\partial x_i| \cdot (x_i/y) = 1.0$, then a 1% change in x_i results in a 1% change in y. If $|\partial y/\partial x_i| \cdot (x_i/y) = 0.05$, then a 1% change in x_i results in a 0.05% change in y.

[m] Relative component of combined standard uncertainty of output quantity y, rounded to two significant figures or less. The relative component of combined standard uncertainty of y is given by $u_i(y)/y \equiv |\partial y/\partial x_i| \cdot u(x_i)/y = |\partial y/\partial x_i| \cdot (x_i/y) \cdot u(x_i)/x_i$. The numerical values of $u(x_i)/x_i$, $|\partial y/\partial x_i| \cdot (x_i/y)$, and $u_i(y)/y$, all dimensionless quantities, are listed in columns 3, 4, and 5, respectively. Thus, the value in column 5 is equal to the value in column 4 multiplied by the value in column 3. The input quantities are independent, or very nearly so. Hence the covariances are zero or negligible.

[n] The relative standard uncertainty of $\lambda \cdot t$ is determined by the relative standard uncertainty of λ (i.e., of the half life). The relative standard uncertainty of t is negligible.

[p] $|\partial y/\partial x_i| \cdot (x_i/y) = |\lambda \cdot t|$

[q] The live time is determined by counting the pulses from a gated oscillator.

[r] The standard uncertainty given is for the detected Cm-243 impurity. $|\partial y/\partial x_i| \cdot (x_i/y)$ = {(response per Bq of impurity)/(response per Bq of Cm-244)}·{(Bq of impurity)/(Bq of Cm-244)}.

[s] The standard uncertainty for each undetected impurity that might reasonably be expected to be present is estimated to be equal to the estimated limit of detection for that impurity, i.e. $u(x_i)/x_i$ = 100%. $|\partial y/\partial x_i| \cdot (x_i/y)$ = {(response per Bq of impurity)/(response per Bq of Cm-244)}·{(Bq of impurity)/(Bq of Cm-244)}. Thus $u_i(y)/y$ is the relative change in y if the impurity were present with a massic activity equal to the estimated limit of detection.

REFERENCES

[1] International Organization for Standardization (ISO), *ISO Standards Handbook - Quantities and Units*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900.

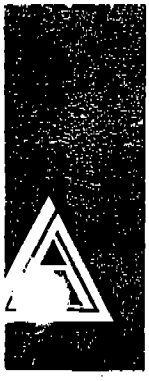
[2] International Organization for Standardization (ISO), *Guide to the Expression of Uncertainty in Measurement*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900. (Listed under ISO miscellaneous publications as "ISO Guide to the Expression 1993".)

[3] B. N. Taylor and C. E. Kuyatt, *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results*, NIST Technical Note 1297, 1994. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20407, U.S.A.

[4] National Council on Radiation Protection and Measurements Report No. 58, *A Handbook of Radioactivity Measurements Procedures*, Second Edition, 1985. Available from the National Council on Radiation Protection and Measurements, 7910 Woodmont Avenue, Bethesda, MD 20814 U.S.A.

[5] Evaluated Nuclear Structure Data File (ENSDF), February 1996.

RC-5-035-005



ANALYTICS

0502

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

64445-278

Gd-148 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master liquid radionuclide solution source. The master source was calibrated by liquid scintillation counting.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ISOTOPE:	Gd-148
ACTIVITY (dps):	3.759 E3
HALF-LIFE:	74.6 years
CALIBRATION DATE:	September 5, 2002 12:00 EST
TOTAL UNCERTAINTY*:	2.7%
SYSTEMATIC:	1.9%
RANDOM:	0.8%

99% confidence level.

5.08493 grams 0.1M HCl solution.

P O NUMBER 3207RD, Item 1

SOURCE PREPARED BY: M.D. Currie

M.D. Currie, Radiochemist

Q A APPROVED: 9-6-02

0493

National Institute of Standards & Technology

Certificate

Standard Reference Material 4341
Radioactivity Standard

Radionuclide	Neptunium-237
Source identification	SRM 4341
Source description	Liquid in flame-sealed NIST borosilicate-glass ampoule (1)*
Solution mass	Approximately 5 grams
Solution composition	Neptunium-237 in 2 $mol \cdot L^{-1}$ nitric acid
Reference time	March 1992
Radioactivity concentration	97.0 $Bq \cdot g^{-1}$
Overall uncertainty	1.28 percent (2)
Photon-emitting impurities	None detected (3)
Alpha-particle-emitting impurities	None detected (4)
Half life	$(2.14 \pm 0.11) \times 10^6$ years (5)
Measuring instrument	NIST "$0.8\pi\alpha$ defined-solid-angle counter with scintillation detector

This standard reference material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M. Robin Hutchinson, Acting Group Leader.

Gaithersburg, MD
January 1993

William P. Reed, Chief
Standard Reference Materials Program

*Notes on back

NOTES

(1) Approximately five milliliters of solution. Ampoule specifications:

body diameter	16.5 ± 0.5 mm
wall thickness	0.60 ± 0.04 mm
barium content	less than 2.5 percent
lead oxide content	less than 0.02 percent
other heavy elements	trace quantities

(2) The overall uncertainty was formed by taking three times the quadratic combination of the standard deviations of the mean, or approximations thereof, for the following:

a) alpha-particle-emission-rate measurements	0.34 percent
b) background	0.01 percent
c) livetime	0.10 percent
d) detection efficiency	0.16 percent
e) count-rate-vs-energy extrapolation to zero energy	0.10 percent
f) half life	0.00 percent
g) gravimetric measurements	0.10 percent
h) alpha-emitting impurities	0.10 percent

(3) The protactinium-233 daughter of neptunium-237 is approximately in equilibrium. The limit of detection for photon-emitting impurities is

0.19 $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 30 and 307 keV and
0.01 $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 317 and 1750 keV,

provided that the impurity photons are separated in energy by 5 keV or more from photons emitted in the decay of neptunium-237 and progeny.

(4) The limit of detection for alpha-particle-emitting impurities is

0.10 $\alpha \cdot s^{-1} \cdot g^{-1}$ for energies between 1.0 and 4.3 MeV and
0.05 $\alpha \cdot s^{-1} \cdot g^{-1}$ for energies between 4.9 and 10 MeV.

(5) Evaluated Nuclear Structure Data File (ENSDF), February 1990.

For further information please contact Dr. J.M. Robin Hutchinson at NIST.
Telephone: (301) 975-5532
FAX: (301) 926-7416

Subsection 1: Energy Calibration

The Energy Calibration energy=Cal_Zero+(e1*C)+(e2*C^2)

where : Cal_Zero = Energy Calibration Zero
e1 = Energy Calibration Slope
e2 = Energy Calibration Quadratic
C = Channel

Instrument : CHAMBER 001
Detector : 33088
Calibration Date/Time : 3-APR-2006 16:30:52
Calibration Source Id : AESS-001

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.589
NP-237	4341	2/28/06	4768.800	4768.498
CM-244	4320A	2/28/06	5795.020	5794.859

Energy/Channel Equation : see above
Energy Calibration Zero : 2394.447
Energy Calibration Slope : 4.976289
Energy Calibration Quadratic : 2.7050270E-04
Energy Calibration Range : 7774.000

Instrument : CHAMBER 003
Detector : 20659
Calibration Date/Time : 3-APR-2006 16:32:34
Calibration Source Id : AESS-003

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.813
NP-237	4341	2/28/06	4768.800	4768.688
CM-244	4320A	2/28/06	5795.020	5795.021

Energy/Channel Equation : see above
Energy Calibration Zero : 2371.253
Energy Calibration Slope : 5.028544
Energy Calibration Quadratic : 2.5955989E-04
Energy Calibration Range : 7793.000

Instrument : CHAMBER 004
Detector : 33077
Calibration Date/Time : 3-APR-2006 16:32:51
Calibration Source Id : AESS-004

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.835
NP-237	4341	2/28/06	4768.800	4768.419
CM-244	4320A	2/28/06	5795.020	5794.571

Energy/Channel Equation : see above
Energy Calibration Zero : 2409.653
Energy Calibration Slope : 4.949907
Energy Calibration Quadratic : 2.7518670E-04
Energy Calibration Range : 7767.000

Instrument : CHAMBER 005
Detector : 28642
Calibration Date/Time : 3-APR-2006 16:33:05
Calibration Source Id : AESS-005

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.800
CM-244	4320A	2/28/06	5795.020	5794.893

Energy/Channel Equation : see above
Energy Calibration Zero : 2356.725
Energy Calibration Slope : 4.952652
Energy Calibration Quadratic : 3.0983411E-04
Energy Calibration Range : 7753.000

Instrument : CHAMBER 007
Detector : 30416
Calibration Date/Time : 3-APR-2006 16:35:21
Calibration Source Id : AESS-007

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.624
CM-244	4320A	2/28/06	5795.020	5795.021

Energy/Channel Equation : see above
Energy Calibration Zero : 2382.813
Energy Calibration Slope : 4.944474
Energy Calibration Quadratic : 3.1966669E-04
Energy Calibration Range : 7781.000

Instrument : CHAMBER 009
Detector : 13285
Calibration Date/Time : 3-APR-2006 16:39:51
Calibration Source Id : AESS-009

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.700
NP-237	4341	2/28/06	4768.800	4768.800
CM-244	4320A	2/28/06	5795.020	5794.917

Energy/Channel Equation : see above
Energy Calibration Zero : 2406.029
Energy Calibration Slope : 4.889740
Energy Calibration Quadratic : 3.3907106E-04
Energy Calibration Range : 7769.000

Instrument : CHAMBER 010
Detector : 33083
Calibration Date/Time : 3-APR-2006 16:40:04
Calibration Source Id : AESS-010

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.328
NP-237	4341	2/28/06	4768.800	4768.118
CM-244	4320A	2/28/06	5795.020	5795.011

Energy/Channel Equation : see above
Energy Calibration Zero : 2382.230
Energy Calibration Slope : 4.964393
Energy Calibration Quadratic : 2.9206229E-04
Energy Calibration Range : 7772.000

Instrument : CHAMBER 011
Detector : 9537
Calibration Date/Time : 3-APR-2006 16:40:58
Calibration Source Id : AESS-011

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.722
NP-237	4341	2/28/06	4768.800	4768.758
CM-244	4320A	2/28/06	5795.020	5794.941

Energy/Channel Equation : see above
Energy Calibration Zero : 2401.574
Energy Calibration Slope : 4.894418
Energy Calibration Quadratic : 3.3610439E-04
Energy Calibration Range : 7766.000

Instrument : CHAMBER 012
Detector : 33085
Calibration Date/Time : 3-APR-2006 16:41:13
Calibration Source Id : AESS-012

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.403
CM-244	4320A	2/28/06	5795.020	5794.958

Energy/Channel Equation : see above
Energy Calibration Zero : 2403.072
Energy Calibration Slope : 4.959775
Energy Calibration Quadratic : 2.8419620E-04
Energy Calibration Range : 7780.000

Instrument : CHAMBER 013
Detector : 21084
Calibration Date/Time : 3-APR-2006 16:41:26
Calibration Source Id : AESS-013

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.603
NP-237	4341	2/28/06	4768.800	4769.678
CM-244	4320A	2/28/06	5795.020	5795.297

Energy/Channel Equation : see above
Energy Calibration Zero : 2372.215
Energy Calibration Slope : 4.879492
Energy Calibration Quadratic : 3.3235765E-04
Energy Calibration Range : 7717.000

Instrument : CHAMBER 016
Detector : 21086
Calibration Date/Time : 3-APR-2006 16:45:33
Calibration Source Id : AESS-016

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.993
NP-237	4341	2/28/06	4768.800	4768.792
CM-244	4320A	2/28/06	5795.020	5794.887

Energy/Channel Equation : see above
Energy Calibration Zero : 2373.788
Energy Calibration Slope : 4.866085
Energy Calibration Quadratic : 3.4461656E-04
Energy Calibration Range : 7718.000

Instrument : CHAMBER 017
Detector : 33203
Calibration Date/Time : 3-APR-2006 16:45:52
Calibration Source Id : AESS-017

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.753
NP-237	4341	2/28/06	4768.800	4768.686
CM-244	4320A	2/28/06	5795.020	5795.002

Energy/Channel Equation : see above
Energy Calibration Zero : 2381.283
Energy Calibration Slope : 4.983909
Energy Calibration Quadratic : 2.9758285E-04
Energy Calibration Range : 7797.000

Instrument : CHAMBER 018
Detector : 21063
Calibration Date/Time : 3-APR-2006 16:46:43
Calibration Source Id : AESS-018

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.678
NP-237	4341	2/28/06	4768.800	4768.731
CM-244	4320A	2/28/06	5795.020	5795.019

Energy/Channel Equation : see above
Energy Calibration Zero : 2340.789
Energy Calibration Slope : 4.900531
Energy Calibration Quadratic : 3.0987556E-04
Energy Calibration Range : 7684.000

Instrument : CHAMBER 019
Detector : 23882
Calibration Date/Time : 3-APR-2006 16:46:59
Calibration Source Id : AESS-019

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.344
NP-237	4341	2/28/06	4768.800	4769.286
CM-244	4320A	2/28/06	5795.020	5795.346

Energy/Channel Equation : see above
Energy Calibration Zero : 2328.678
Energy Calibration Slope : 5.011906
Energy Calibration Quadratic : 2.4903595E-04
Energy Calibration Range : 7722.000

Instrument : CHAMBER 020
Detector : 33093
Calibration Date/Time : 3-APR-2006 16:47:46
Calibration Source Id : AESS-020

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.523
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2351.189
Energy Calibration Slope : 4.985672
Energy Calibration Quadratic : 2.7204608E-04
Energy Calibration Range : 7742.000

Instrument : CHAMBER 021
Detector : 33893
Calibration Date/Time : 3-APR-2006 16:48:06
Calibration Source Id : AESS-021

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.276
NP-237	4341	2/28/06	4768.800	4768.355
CM-244	4320A	2/28/06	5795.020	5794.907

Energy/Channel Equation : see above
Energy Calibration Zero : 2374.427
Energy Calibration Slope : 4.951159
Energy Calibration Quadratic : 3.0070700E-04
Energy Calibration Range : 7760.000

Instrument : CHAMBER 023
Detector : 22873
Calibration Date/Time : 3-APR-2006 16:49:38
Calibration Source Id : AESS-023

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3180.453
NP-237	4341	2/28/06	4768.800	4764.511
CM-244	4320A	2/28/06	5795.020	5793.157

Energy/Channel Equation : see above
Energy Calibration Zero : 2403.611
Energy Calibration Slope : 4.972397
Energy Calibration Quadratic : 2.1793865E-04
Energy Calibration Range : 7724.000

Instrument : CHAMBER 026
Detector : 34427
Calibration Date/Time : 4-APR-2006 12:02:00
Calibration Source Id : AESS-002

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.743
NP-237	4341	2/28/06	4768.800	4768.458
CM-244	4320A	2/28/06	5795.020	5794.860

Energy/Channel Equation : see above
Energy Calibration Zero : 2367.357
Energy Calibration Slope : 4.926605
Energy Calibration Quadratic : 3.3364003E-04
Energy Calibration Range : 7762.000

Instrument : CHAMBER 027
Detector : 31436
Calibration Date/Time : 4-APR-2006 12:02:17
Calibration Source Id : AESS-003

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.368
NP-237	4341	2/28/06	4768.800	4769.435
CM-244	4320A	2/28/06	5795.020	5795.142

Energy/Channel Equation : see above
Energy Calibration Zero : 2385.802
Energy Calibration Slope : 4.966618
Energy Calibration Quadratic : 2.6491811E-04
Energy Calibration Range : 7749.000

Instrument : CHAMBER 028
Detector : 21056
Calibration Date/Time : 4-APR-2006 12:02:41
Calibration Source Id : AESS-004

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.801
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2320.544
Energy Calibration Slope : 4.935237
Energy Calibration Quadratic : 2.7769944E-04
Energy Calibration Range : 7665.000

Instrument : CHAMBER 029
Detector : 30419
Calibration Date/Time : 4-APR-2006 12:02:56
Calibration Source Id : AESS-005

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.690
NP-237	4341	2/28/06	4768.800	4770.051
CM-244	4320A	2/28/06	5795.020	5795.380

Energy/Channel Equation : see above
Energy Calibration Zero : 2360.631
Energy Calibration Slope : 4.932264
Energy Calibration Quadratic : 2.8612607E-04
Energy Calibration Range : 7711.000

Instrument : CHAMBER 030
Detector : 30420
Calibration Date/Time : 4-APR-2006 12:03:11
Calibration Source Id : AESS-006

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.638
CM-244	4320A	2/28/06	5795.020	5794.905

Energy/Channel Equation : see above
Energy Calibration Zero : 2379.492
Energy Calibration Slope : 4.942307
Energy Calibration Quadratic : 3.2948688E-04
Energy Calibration Range : 7786.000

Instrument : CHAMBER 032
Detector : 33207
Calibration Date/Time : 4-APR-2006 12:04:09
Calibration Source Id : AESS-008

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.162
NP-237	4341	2/28/06	4768.800	4769.075
CM-244	4320A	2/28/06	5795.020	5795.066

Energy/Channel Equation : see above
Energy Calibration Zero : 2332.264
Energy Calibration Slope : 4.962142
Energy Calibration Quadratic : 2.9673061E-04
Energy Calibration Range : 7725.000

Instrument : CHAMBER 033
Detector : 28647
Calibration Date/Time : 4-APR-2006 12:04:20
Calibration Source Id : AESS-009

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.737
CM-244	4320A	2/28/06	5795.020	5794.927

Energy/Channel Equation : see above
Energy Calibration Zero : 2371.926
Energy Calibration Slope : 4.915609
Energy Calibration Quadratic : 3.0408576E-04
Energy Calibration Range : 7724.000

Instrument : CHAMBER 034
Detector : 32697
Calibration Date/Time : 4-APR-2006 12:04:32
Calibration Source Id : AESS-010

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.670
NP-237	4341	2/28/06	4768.800	4768.840
CM-244	4320A	2/28/06	5795.020	5795.021

Energy/Channel Equation : see above
Energy Calibration Zero : 2340.410
Energy Calibration Slope : 4.974835
Energy Calibration Quadratic : 3.3510773E-04
Energy Calibration Range : 7786.000

Instrument : CHAMBER 035
Detector : 29271
Calibration Date/Time : 4-APR-2006 12:04:44
Calibration Source Id : AESS-011

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.800
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2347.646
Energy Calibration Slope : 4.986292
Energy Calibration Quadratic : 2.8726328E-04
Energy Calibration Range : 7755.000

Instrument : CHAMBER 036
Detector : 29275
Calibration Date/Time : 4-APR-2006 12:04:58
Calibration Source Id : AESS-012

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.797
NP-237	4341	2/28/06	4768.800	4767.041
CM-244	4320A	2/28/06	5795.020	5793.387

Energy/Channel Equation : see above
Energy Calibration Zero : 2388.490
Energy Calibration Slope : 5.017391
Energy Calibration Quadratic : 3.2070087E-04
Energy Calibration Range : 7863.000

Instrument : CHAMBER 037
Detector : 32690
Calibration Date/Time : 4-APR-2006 12:05:37
Calibration Source Id : AESS-013

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.312
CM-244	4320A	2/28/06	5795.020	5794.990

Energy/Channel Equation : see above
Energy Calibration Zero : 2422.263
Energy Calibration Slope : 4.994318
Energy Calibration Quadratic : 2.9049869E-04
Energy Calibration Range : 7841.000

Instrument : CHAMBER 038
Detector : 19323
Calibration Date/Time : 4-APR-2006 12:05:48
Calibration Source Id : AESS-014

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.338
NP-237	4341	2/28/06	4768.800	4769.033
CM-244	4320A	2/28/06	5795.020	5795.267

Energy/Channel Equation : see above
Energy Calibration Zero : 2386.917
Energy Calibration Slope : 4.961154
Energy Calibration Quadratic : 3.4057652E-04
Energy Calibration Range : 7824.000

Instrument : CHAMBER 040
Detector : 30446
Calibration Date/Time : 4-APR-2006 12:06:33
Calibration Source Id : AESS-016

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.744
NP-237	4341	2/28/06	4768.800	4768.729
CM-244	4320A	2/28/06	5795.020	5794.990

Energy/Channel Equation : see above
Energy Calibration Zero : 2361.522
Energy Calibration Slope : 4.912026
Energy Calibration Quadratic : 3.2777814E-04
Energy Calibration Range : 7735.000

Instrument : CHAMBER 041
Detector : 22834
Calibration Date/Time : 4-APR-2006 12:06:46
Calibration Source Id : AESS-017

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4769.004
CM-244	4320A	2/28/06	5795.020	5795.141

Energy/Channel Equation : see above
Energy Calibration Zero : 2357.184
Energy Calibration Slope : 4.881192
Energy Calibration Quadratic : 3.4815943E-04
Energy Calibration Range : 7721.000

Instrument : CHAMBER 042
Detector : 32695
Calibration Date/Time : 4-APR-2006 12:07:02
Calibration Source Id : AESS-018

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4769.104
CM-244	4320A	2/28/06	5795.020	5795.107

Energy/Channel Equation : see above
Energy Calibration Zero : 2418.706
Energy Calibration Slope : 4.890110
Energy Calibration Quadratic : 3.4867792E-04
Energy Calibration Range : 7792.000

Instrument : CHAMBER 043
Detector : 42470
Calibration Date/Time : 4-APR-2006 12:07:20
Calibration Source Id : AESS-019

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4769.388
CM-244	4320A	2/28/06	5795.020	5795.759

Energy/Channel Equation : see above
Energy Calibration Zero : 2363.161
Energy Calibration Slope : 5.010756
Energy Calibration Quadratic : 2.3886505E-04
Energy Calibration Range : 7745.000

Instrument : CHAMBER 044
Detector : 34433
Calibration Date/Time : 4-APR-2006 12:07:31
Calibration Source Id : AESS-020

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.800
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2381.287
Energy Calibration Slope : 4.986757
Energy Calibration Quadratic : 2.9497029E-04
Energy Calibration Range : 7797.000

Instrument : CHAMBER 045
Detector : 34430
Calibration Date/Time : 4-APR-2006 12:07:49
Calibration Source Id : AESS-021

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.799
CM-244	4320A	2/28/06	5795.020	5795.021

Energy/Channel Equation : see above
Energy Calibration Zero : 2396.370
Energy Calibration Slope : 4.975925
Energy Calibration Quadratic : 2.7766536E-04
Energy Calibration Range : 7783.000

Instrument : CHAMBER 046
Detector : 42471
Calibration Date/Time : 4-APR-2006 12:08:03
Calibration Source Id : AESS-022

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.981
NP-237	4341	2/28/06	4768.800	4768.475
CM-244	4320A	2/28/06	5795.020	5794.831

Energy/Channel Equation : see above
Energy Calibration Zero : 2370.690
Energy Calibration Slope : 4.938850
Energy Calibration Quadratic : 3.0132200E-04
Energy Calibration Range : 7744.000

Instrument : CHAMBER 047
Detector : 30449
Calibration Date/Time : 4-APR-2006 12:08:14
Calibration Source Id : AESS-023

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.801
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2367.885
Energy Calibration Slope : 4.977801
Energy Calibration Quadratic : 2.7243813E-04
Energy Calibration Range : 7751.000

Instrument : CHAMBER 048
Detector : 42483
Calibration Date/Time : 4-APR-2006 12:08:24
Calibration Source Id : AESS-024

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.800
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2379.919
Energy Calibration Slope : 5.011742
Energy Calibration Quadratic : 2.4467456E-04
Energy Calibration Range : 7769.000

Instrument : CHAMBER 065
Detector : 21087
Calibration Date/Time : 3-APR-2006 12:05:24
Calibration Source Id : AESS-001

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.701
NP-237	4341	2/28/06	4768.800	4768.799
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2381.709
Energy Calibration Slope : 4.966328
Energy Calibration Quadratic : 3.2913609E-04
Energy Calibration Range : 7812.000

Instrument : CHAMBER 066
Detector : 38159
Calibration Date/Time : 3-APR-2006 12:05:41
Calibration Source Id : AESS-002

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.194
NP-237	4341	2/28/06	4768.800	4769.460
CM-244	4320A	2/28/06	5795.020	5795.202

Energy/Channel Equation : see above
Energy Calibration Zero : 2361.937
Energy Calibration Slope : 4.956664
Energy Calibration Quadratic : 3.0704346E-04
Energy Calibration Range : 7760.000

Instrument : CHAMBER 068
Detector : 33204
Calibration Date/Time : 3-APR-2006 12:06:11
Calibration Source Id : AESS-004

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.734
NP-237	4341	2/28/06	4768.800	4768.288
CM-244	4320A	2/28/06	5795.020	5794.885

Energy/Channel Equation : see above
Energy Calibration Zero : 2340.602
Energy Calibration Slope : 4.952214
Energy Calibration Quadratic : 2.9989655E-04
Energy Calibration Range : 7726.000

Instrument : CHAMBER 069
Detector : 39172
Calibration Date/Time : 3-APR-2006 12:06:22
Calibration Source Id : AESS-005

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.678
NP-237	4341	2/28/06	4768.800	4768.439
CM-244	4320A	2/28/06	5795.020	5794.953

Energy/Channel Equation : see above
Energy Calibration Zero : 2383.433
Energy Calibration Slope : 4.992626
Energy Calibration Quadratic : 3.0025930E-04
Energy Calibration Range : 7811.000

Instrument : CHAMBER 070
Detector : 33207
Calibration Date/Time : 3-APR-2006 12:06:32
Calibration Source Id : AESS-006

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.583
NP-237	4341	2/28/06	4768.800	4768.687
CM-244	4320A	2/28/06	5795.020	5794.788

Energy/Channel Equation : see above
Energy Calibration Zero : 2397.668
Energy Calibration Slope : 4.915377
Energy Calibration Quadratic : 3.6479929E-04
Energy Calibration Range : 7814.000

Instrument : CHAMBER 072
Detector : 33210
Calibration Date/Time : 3-APR-2006 12:07:20
Calibration Source Id : AESS-008

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3185.797
NP-237	4341	2/28/06	4768.800	4771.520
CM-244	4320A	2/28/06	5795.020	5795.709

Energy/Channel Equation : see above
Energy Calibration Zero : 2429.633
Energy Calibration Slope : 4.970463
Energy Calibration Quadratic : 2.6446831E-04
Energy Calibration Range : 7797.000

Instrument : CHAMBER 073
Detector : 33211
Calibration Date/Time : 3-APR-2006 12:07:31
Calibration Source Id : AESS-009

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.651
NP-237	4341	2/28/06	4768.800	4768.479
CM-244	4320A	2/28/06	5795.020	5794.623

Energy/Channel Equation : see above
Energy Calibration Zero : 2374.705
Energy Calibration Slope : 4.961344
Energy Calibration Quadratic : 3.4754534E-04
Energy Calibration Range : 7820.000

Instrument : CHAMBER 075
Detector : 29976
Calibration Date/Time : 3-APR-2006 12:07:53
Calibration Source Id : AESS-011

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.693
NP-237	4341	2/28/06	4768.800	4768.668
CM-244	4320A	2/28/06	5795.020	5794.923

Energy/Channel Equation : see above
Energy Calibration Zero : 2362.553
Energy Calibration Slope : 4.960943
Energy Calibration Quadratic : 3.2853242E-04
Energy Calibration Range : 7787.000

Instrument : CHAMBER 076
Detector : 33213
Calibration Date/Time : 3-APR-2006 12:08:02
Calibration Source Id : AESS-012

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.644
NP-237	4341	2/28/06	4768.800	4768.760
CM-244	4320A	2/28/06	5795.020	5794.972

Energy/Channel Equation : see above
Energy Calibration Zero : 2372.898
Energy Calibration Slope : 4.983890
Energy Calibration Quadratic : 3.3487112E-04
Energy Calibration Range : 7828.000

Instrument : CHAMBER 077
Detector : 28239
Calibration Date/Time : 3-APR-2006 12:08:16
Calibration Source Id : AESS-013

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.346
NP-237	4341	2/28/06	4768.800	4769.262
CM-244	4320A	2/28/06	5795.020	5795.317

Energy/Channel Equation : see above
Energy Calibration Zero : 2368.874
Energy Calibration Slope : 4.931313
Energy Calibration Quadratic : 3.2203639E-04
Energy Calibration Range : 7756.000

Instrument : CHAMBER 078
Detector : 34425
Calibration Date/Time : 3-APR-2006 12:08:26
Calibration Source Id : AESS-014

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.993
NP-237	4341	2/28/06	4768.800	4768.645
CM-244	4320A	2/28/06	5795.020	5794.911

Energy/Channel Equation : see above
Energy Calibration Zero : 2393.754
Energy Calibration Slope : 4.904502
Energy Calibration Quadratic : 3.5731806E-04
Energy Calibration Range : 7791.000

Instrument : CHAMBER 079
Detector : 28408
Calibration Date/Time : 3-APR-2006 12:08:37
Calibration Source Id : AESS-015

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.266
NP-237	4341	2/28/06	4768.800	4768.567
CM-244	4320A	2/28/06	5795.020	5794.887

Energy/Channel Equation : see above
Energy Calibration Zero : 2383.558
Energy Calibration Slope : 4.929332
Energy Calibration Quadratic : 3.0991141E-04
Energy Calibration Range : 7756.000

Instrument : CHAMBER 080
Detector : 29269
Calibration Date/Time : 3-APR-2006 12:08:46
Calibration Source Id : AESS-016

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.363
NP-237	4341	2/28/06	4768.800	4768.345
CM-244	4320A	2/28/06	5795.020	5794.711

Energy/Channel Equation : see above
Energy Calibration Zero : 2360.141
Energy Calibration Slope : 5.008783
Energy Calibration Quadratic : 2.6339359E-04
Energy Calibration Range : 7765.000

Instrument : CHAMBER 081
Detector : 28243
Calibration Date/Time : 5-APR-2006 14:20:00
Calibration Source Id : AESS-017

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4769.124
CM-244	4320A	2/28/06	5795.020	5795.316

Energy/Channel Equation : see above
Energy Calibration Zero : 2423.205
Energy Calibration Slope : 4.974538
Energy Calibration Quadratic : 2.3569762E-04
Energy Calibration Range : 7764.000

Instrument : CHAMBER 083
Detector : 34436
Calibration Date/Time : 3-APR-2006 12:09:35
Calibration Source Id : AESS-019

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.144
CM-244	4320A	2/28/06	5795.020	5794.581

Energy/Channel Equation : see above
Energy Calibration Zero : 2370.701
Energy Calibration Slope : 5.018431
Energy Calibration Quadratic : 2.5893620E-04
Energy Calibration Range : 7781.000

Instrument : CHAMBER 084
Detector : 29953
Calibration Date/Time : 3-APR-2006 12:09:48
Calibration Source Id : AESS-020

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.067
NP-237	4341	2/28/06	4768.800	4768.425
CM-244	4320A	2/28/06	5795.020	5794.511

Energy/Channel Equation : see above
Energy Calibration Zero : 2368.562
Energy Calibration Slope : 5.005028
Energy Calibration Quadratic : 3.0593007E-04
Energy Calibration Range : 7815.000

Instrument : CHAMBER 085
Detector : 30451
Calibration Date/Time : 3-APR-2006 12:10:02
Calibration Source Id : AESS-021

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.503
NP-237	4341	2/28/06	4768.800	4768.802
CM-244	4320A	2/28/06	5795.020	5795.019

Energy/Channel Equation : see above
Energy Calibration Zero : 2385.228
Energy Calibration Slope : 4.990182
Energy Calibration Quadratic : 3.0125739E-04
Energy Calibration Range : 7811.000

Instrument : CHAMBER 086
Detector : 29278
Calibration Date/Time : 3-APR-2006 12:10:24
Calibration Source Id : AESS-022

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.313
CM-244	4320A	2/28/06	5795.020	5794.889

Energy/Channel Equation : see above
Energy Calibration Zero : 2367.011
Energy Calibration Slope : 5.001186
Energy Calibration Quadratic : 2.4593988E-04
Energy Calibration Range : 7746.000

Instrument : CHAMBER 087
Detector : 34430
Calibration Date/Time : 3-APR-2006 12:10:36
Calibration Source Id : AESS-023

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.326
NP-237	4341	2/28/06	4768.800	4768.556
CM-244	4320A	2/28/06	5795.020	5794.574

Energy/Channel Equation : see above
Energy Calibration Zero : 2363.815
Energy Calibration Slope : 5.009631
Energy Calibration Quadratic : 2.4977388E-04
Energy Calibration Range : 7756.000

Instrument : CHAMBER 088
Detector : 30434
Calibration Date/Time : 3-APR-2006 12:10:54
Calibration Source Id : AESS-024

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.313
NP-237	4341	2/28/06	4768.800	4767.746
CM-244	4320A	2/28/06	5795.020	5794.659

Energy/Channel Equation : see above
Energy Calibration Zero : 2334.709
Energy Calibration Slope : 4.874549
Energy Calibration Quadratic : 2.1355411E-04
Energy Calibration Range : 7550.000

Instrument : CHAMBER 089
Detector : 21087
Calibration Date/Time : 3-APR-2006 23:05:32
Calibration Source Id : AESS-001

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.451
NP-237	4341	2/28/06	4768.800	4768.626
CM-244	4320A	2/28/06	5795.020	5794.917

Energy/Channel Equation : see above
Energy Calibration Zero : 2349.260
Energy Calibration Slope : 4.948930
Energy Calibration Quadratic : 3.2322409E-04
Energy Calibration Range : 7756.000

Instrument : CHAMBER 090
Detector : 38159
Calibration Date/Time : 3-APR-2006 23:06:16
Calibration Source Id : AESS-002

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.800
CM-244	4320A	2/28/06	5795.020	5794.866

Energy/Channel Equation : see above
Energy Calibration Zero : 2386.311
Energy Calibration Slope : 4.986774
Energy Calibration Quadratic : 3.3244080E-04
Energy Calibration Range : 7841.000

Instrument : CHAMBER 091
Detector : 33205
Calibration Date/Time : 4-APR-2006 21:06:36
Calibration Source Id : AESS-003

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.391
NP-237	4341	2/28/06	4768.800	4769.357
CM-244	4320A	2/28/06	5795.020	5795.305

Energy/Channel Equation : see above
Energy Calibration Zero : 2363.386
Energy Calibration Slope : 4.961743
Energy Calibration Quadratic : 3.2066394E-04
Energy Calibration Range : 7780.000

Instrument : CHAMBER 092
Detector : 33204
Calibration Date/Time : 3-APR-2006 23:08:02
Calibration Source Id : AESS-004

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.867
CM-244	4320A	2/28/06	5795.020	5795.175

Energy/Channel Equation : see above
Energy Calibration Zero : 2358.222
Energy Calibration Slope : 4.950097
Energy Calibration Quadratic : 3.0710385E-04
Energy Calibration Range : 7749.000

Instrument : CHAMBER 093
Detector : 33206
Calibration Date/Time : 3-APR-2006 23:08:14
Calibration Source Id : AESS-005

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4769.063
CM-244	4320A	2/28/06	5795.020	5795.298

Energy/Channel Equation : see above
Energy Calibration Zero : 2375.739
Energy Calibration Slope : 4.926612
Energy Calibration Quadratic : 3.1170124E-04
Energy Calibration Range : 7747.000

Instrument : CHAMBER 094
Detector : 33207
Calibration Date/Time : 3-APR-2006 23:08:34
Calibration Source Id : AESS-006

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.993
NP-237	4341	2/28/06	4768.800	4768.799
CM-244	4320A	2/28/06	5795.020	5795.021

Energy/Channel Equation : see above
Energy Calibration Zero : 2369.583
Energy Calibration Slope : 4.936423
Energy Calibration Quadratic : 3.2235958E-04
Energy Calibration Range : 7762.000

Instrument : CHAMBER 096
Detector : 30429
Calibration Date/Time : 3-APR-2006 23:09:48
Calibration Source Id : AESS-008

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.677
NP-237	4341	2/28/06	4768.800	4768.561
CM-244	4320A	2/28/06	5795.020	5794.869

Energy/Channel Equation : see above
Energy Calibration Zero : 2346.092
Energy Calibration Slope : 4.863141
Energy Calibration Quadratic : 3.1486651E-04
Energy Calibration Range : 7656.000

Instrument : CHAMBER 098
Detector : 30431
Calibration Date/Time : 3-APR-2006 23:10:26
Calibration Source Id : AESS-010

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.647
NP-237	4341	2/28/06	4768.800	4768.514
CM-244	4320A	2/28/06	5795.020	5794.903

Energy/Channel Equation : see above
Energy Calibration Zero : 2380.759
Energy Calibration Slope : 4.922705
Energy Calibration Quadratic : 3.2662629E-04
Energy Calibration Range : 7764.000

Instrument : CHAMBER 099
Detector : 30432
Calibration Date/Time : 4-APR-2006 21:07:16
Calibration Source Id : AESS-011

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4769.171
CM-244	4320A	2/28/06	5795.020	5795.241

Energy/Channel Equation : see above
Energy Calibration Zero : 2411.170
Energy Calibration Slope : 4.859684
Energy Calibration Quadratic : 3.3678240E-04
Energy Calibration Range : 7741.000

Instrument : CHAMBER 101
Detector : 31696
Calibration Date/Time : 3-APR-2006 23:11:17
Calibration Source Id : AESS-013

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.759
NP-237	4341	2/28/06	4768.800	4767.478
CM-244	4320A	2/28/06	5795.020	5793.923

Energy/Channel Equation : see above
Energy Calibration Zero : 2397.165
Energy Calibration Slope : 4.939373
Energy Calibration Quadratic : 2.7448736E-04
Energy Calibration Range : 7743.000

Instrument : CHAMBER 102
Detector : 30438
Calibration Date/Time : 3-APR-2006 23:11:38
Calibration Source Id : AESS-014

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.799
CM-244	4320A	2/28/06	5795.020	5795.021

Energy/Channel Equation : see above
Energy Calibration Zero : 2390.065
Energy Calibration Slope : 4.967123
Energy Calibration Quadratic : 3.3759646E-04
Energy Calibration Range : 7830.000

Instrument : CHAMBER 103
Detector : 30437
Calibration Date/Time : 3-APR-2006 23:11:50
Calibration Source Id : AESS-015

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.632
NP-237	4341	2/28/06	4768.800	4768.780
CM-244	4320A	2/28/06	5795.020	5795.021

Energy/Channel Equation : see above
Energy Calibration Zero : 2378.634
Energy Calibration Slope : 4.949142
Energy Calibration Quadratic : 3.4029011E-04
Energy Calibration Range : 7803.000

Instrument : CHAMBER 104
Detector : 30436
Calibration Date/Time : 3-APR-2006 23:12:05
Calibration Source Id : AESS-016

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.656
NP-237	4341	2/28/06	4768.800	4768.710
CM-244	4320A	2/28/06	5795.020	5794.893

Energy/Channel Equation : see above
Energy Calibration Zero : 2402.033
Energy Calibration Slope : 4.941638
Energy Calibration Quadratic : 3.3733863E-04
Energy Calibration Range : 7816.000

Instrument : CHAMBER 106
Detector : 45382
Calibration Date/Time : 3-APR-2006 23:13:35
Calibration Source Id : AESS-018

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.390
NP-237	4341	2/28/06	4768.800	4768.938
CM-244	4320A	2/28/06	5795.020	5795.081

Energy/Channel Equation : see above
Energy Calibration Zero : 2377.948
Energy Calibration Slope : 4.942991
Energy Calibration Quadratic : 3.4093895E-04
Energy Calibration Range : 7797.000

Instrument : CHAMBER 107
Detector : 31697
Calibration Date/Time : 3-APR-2006 23:13:46
Calibration Source Id : AESS-019

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.800
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2398.373
Energy Calibration Slope : 4.985534
Energy Calibration Quadratic : 2.7872290E-04
Energy Calibration Range : 7796.000

Instrument : CHAMBER 109
Detector : 31693
Calibration Date/Time : 3-APR-2006 23:14:12
Calibration Source Id : AESS-021

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4769.000
CM-244	4320A	2/28/06	5795.020	5795.208

Energy/Channel Equation : see above
Energy Calibration Zero : 2387.754
Energy Calibration Slope : 4.924148
Energy Calibration Quadratic : 3.0788378E-04
Energy Calibration Range : 7753.000

Instrument : CHAMBER 110
Detector : 30447
Calibration Date/Time : 4-APR-2006 21:08:36
Calibration Source Id : AESS-022

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.635
NP-237	4341	2/28/06	4768.800	4768.800
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2419.221
Energy Calibration Slope : 4.999035
Energy Calibration Quadratic : 2.2320703E-04
Energy Calibration Range : 7772.000

Instrument : CHAMBER 111
Detector : 30448
Calibration Date/Time : 3-APR-2006 23:15:36
Calibration Source Id : AESS-023

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.627
NP-237	4341	2/28/06	4768.800	4768.799
CM-244	4320A	2/28/06	5795.020	5795.021

Energy/Channel Equation : see above
Energy Calibration Zero : 2388.052
Energy Calibration Slope : 4.962283
Energy Calibration Quadratic : 2.9634466E-04
Energy Calibration Range : 7780.000

Instrument : CHAMBER 112
Detector : 30449
Calibration Date/Time : 3-APR-2006 23:15:47
Calibration Source Id : AESS-024

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.664
CM-244	4320A	2/28/06	5795.020	5795.019

Energy/Channel Equation : see above
Energy Calibration Zero : 2375.519
Energy Calibration Slope : 4.935473
Energy Calibration Quadratic : 2.8306872E-04
Energy Calibration Range : 7726.000

Instrument : CHAMBER 113
Detector : 45-111B4
Calibration Date/Time : 4-APR-2006 17:02:58
Calibration Source Id : AESS-001

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.303
NP-237	4341	2/28/06	4768.800	4767.615
CM-244	4320A	2/28/06	5795.020	5794.404

Energy/Channel Equation : see above
Energy Calibration Zero : 2393.614
Energy Calibration Slope : 4.990646
Energy Calibration Quadratic : 3.0610454E-04
Energy Calibration Range : 7825.000

Instrument : CHAMBER 114
Detector : 45-111B5
Calibration Date/Time : 4-APR-2006 17:03:22
Calibration Source Id : AESS-007

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.771
NP-237	4341	2/28/06	4768.800	4767.996
CM-244	4320A	2/28/06	5795.020	5794.695

Energy/Channel Equation : see above
Energy Calibration Zero : 2391.292
Energy Calibration Slope : 4.957956
Energy Calibration Quadratic : 3.2139214E-04
Energy Calibration Range : 7805.000

Instrument : CHAMBER 115
Detector : 45-132EE5
Calibration Date/Time : 4-APR-2006 17:03:37
Calibration Source Id : AESS-002

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.468
CM-244	4320A	2/28/06	5795.020	5794.664

Energy/Channel Equation : see above
Energy Calibration Zero : 2372.417
Energy Calibration Slope : 4.988519
Energy Calibration Quadratic : 2.9488039E-04
Energy Calibration Range : 7790.000

Instrument : CHAMBER 116
Detector : 45-132FF2
Calibration Date/Time : 4-APR-2006 17:03:51
Calibration Source Id : AESS-008

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.985
NP-237	4341	2/28/06	4768.800	4767.986
CM-244	4320A	2/28/06	5795.020	5794.612

Energy/Channel Equation : see above
Energy Calibration Zero : 2377.594
Energy Calibration Slope : 4.965635
Energy Calibration Quadratic : 3.1974592E-04
Energy Calibration Range : 7798.000

Instrument : CHAMBER 117
Detector : 45-132FF3
Calibration Date/Time : 4-APR-2006 17:04:04
Calibration Source Id : AESS-003

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.825
NP-237	4341	2/28/06	4768.800	4767.294
CM-244	4320A	2/28/06	5795.020	5794.289

Energy/Channel Equation : see above
Energy Calibration Zero : 2399.138
Energy Calibration Slope : 4.995797
Energy Calibration Quadratic : 2.8692893E-04
Energy Calibration Range : 7816.000

Instrument : CHAMBER 118
Detector : 45-132FF4
Calibration Date/Time : 4-APR-2006 17:04:21
Calibration Source Id : AESS-009

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.738
NP-237	4341	2/28/06	4768.800	4767.705
CM-244	4320A	2/28/06	5795.020	5794.733

Energy/Channel Equation : see above
Energy Calibration Zero : 2382.726
Energy Calibration Slope : 4.977871
Energy Calibration Quadratic : 3.1087140E-04
Energy Calibration Range : 7806.000

Instrument : CHAMBER 119
Detector : 45-132FF5
Calibration Date/Time : 4-APR-2006 17:04:33
Calibration Source Id : AESS-004

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.725
NP-237	4341	2/28/06	4768.800	4768.406
CM-244	4320A	2/28/06	5795.020	5794.422

Energy/Channel Equation : see above
Energy Calibration Zero : 2394.460
Energy Calibration Slope : 4.945233
Energy Calibration Quadratic : 3.2115451E-04
Energy Calibration Range : 7795.000

Instrument : CHAMBER 120
Detector : 45-142F1
Calibration Date/Time : 4-APR-2006 17:05:08
Calibration Source Id : AESS-010

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.702
NP-237	4341	2/28/06	4768.800	4767.716
CM-244	4320A	2/28/06	5795.020	5794.385

Energy/Channel Equation : see above
Energy Calibration Zero : 2370.954
Energy Calibration Slope : 4.969444
Energy Calibration Quadratic : 2.9560321E-04
Energy Calibration Range : 7770.000

Instrument : CHAMBER 121
Detector : 45-142J4
Calibration Date/Time : 4-APR-2006 17:05:19
Calibration Source Id : AESS-005

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.854
NP-237	4341	2/28/06	4768.800	4767.926
CM-244	4320A	2/28/06	5795.020	5794.359

Energy/Channel Equation : see above
Energy Calibration Zero : 2388.517
Energy Calibration Slope : 4.957601
Energy Calibration Quadratic : 3.2604721E-04
Energy Calibration Range : 7807.000

Instrument : CHAMBER 122
Detector : 45-142J5
Calibration Date/Time : 4-APR-2006 17:05:33
Calibration Source Id : AESS-011

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.708
NP-237	4341	2/28/06	4768.800	4767.643
CM-244	4320A	2/28/06	5795.020	5794.644

Energy/Channel Equation : see above
Energy Calibration Zero : 2379.562
Energy Calibration Slope : 4.966173
Energy Calibration Quadratic : 3.1077259E-04
Energy Calibration Range : 7791.000

Instrument : CHAMBER 123
Detector : 45-142V1
Calibration Date/Time : 4-APR-2006 17:05:57
Calibration Source Id : AESS-006

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3180.927
NP-237	4341	2/28/06	4768.800	4767.132
CM-244	4320A	2/28/06	5795.020	5794.117

Energy/Channel Equation : see above
Energy Calibration Zero : 2393.486
Energy Calibration Slope : 4.981727
Energy Calibration Quadratic : 2.8783656E-04
Energy Calibration Range : 7797.000

Instrument : CHAMBER 124
Detector : 45-142V2
Calibration Date/Time : 4-APR-2006 17:06:12
Calibration Source Id : AESS-012

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.329
NP-237	4341	2/28/06	4768.800	4767.124
CM-244	4320A	2/28/06	5795.020	5794.622

Energy/Channel Equation : see above
Energy Calibration Zero : 2394.312
Energy Calibration Slope : 4.963425
Energy Calibration Quadratic : 3.1662040E-04
Energy Calibration Range : 7809.000

Instrument : CHAMBER 125
Detector : 45-142V3
Calibration Date/Time : 4-APR-2006 17:06:28
Calibration Source Id : AESS-013

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.749
NP-237	4341	2/28/06	4768.800	4766.709
CM-244	4320A	2/28/06	5795.020	5794.138

Energy/Channel Equation : see above
Energy Calibration Zero : 2389.743
Energy Calibration Slope : 4.991052
Energy Calibration Quadratic : 2.6156937E-04
Energy Calibration Range : 7775.000

Instrument : CHAMBER 126
Detector : 45-142V5
Calibration Date/Time : 4-APR-2006 17:06:44
Calibration Source Id : AESS-019

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.536
NP-237	4341	2/28/06	4768.800	4766.676
CM-244	4320A	2/28/06	5795.020	5794.299

Energy/Channel Equation : see above
Energy Calibration Zero : 2392.589
Energy Calibration Slope : 5.019009
Energy Calibration Quadratic : 2.5404955E-04
Energy Calibration Range : 7798.000

Instrument : CHAMBER 127
Detector : 45-142W1
Calibration Date/Time : 4-APR-2006 17:07:12
Calibration Source Id : AESS-014

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.047
NP-237	4341	2/28/06	4768.800	4767.379
CM-244	4320A	2/28/06	5795.020	5794.462

Energy/Channel Equation : see above
Energy Calibration Zero : 2390.982
Energy Calibration Slope : 4.949072
Energy Calibration Quadratic : 3.2237647E-04
Energy Calibration Range : 7797.000

Instrument : CHAMBER 128
Detector : 45-142W2
Calibration Date/Time : 4-APR-2006 17:07:27
Calibration Source Id : AESS-020

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.794
NP-237	4341	2/28/06	4768.800	4767.351
CM-244	4320A	2/28/06	5795.020	5794.426

Energy/Channel Equation : see above
Energy Calibration Zero : 2376.436
Energy Calibration Slope : 4.990520
Energy Calibration Quadratic : 2.8923506E-04
Energy Calibration Range : 7790.000

Instrument : CHAMBER 129
Detector : 45-142W3
Calibration Date/Time : 4-APR-2006 17:07:43
Calibration Source Id : AESS-015

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.920
NP-237	4341	2/28/06	4768.800	4767.431
CM-244	4320A	2/28/06	5795.020	5794.286

Energy/Channel Equation : see above
Energy Calibration Zero : 2397.947
Energy Calibration Slope : 4.950837
Energy Calibration Quadratic : 3.2286491E-04
Energy Calibration Range : 7806.000

Instrument : CHAMBER 130
Detector : 45-142W5
Calibration Date/Time : 4-APR-2006 17:07:58
Calibration Source Id : AESS-021

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.779
NP-237	4341	2/28/06	4768.800	4767.779
CM-244	4320A	2/28/06	5795.020	5794.289

Energy/Channel Equation : see above
Energy Calibration Zero : 2390.948
Energy Calibration Slope : 5.005381
Energy Calibration Quadratic : 2.9957382E-04
Energy Calibration Range : 7831.000

Instrument : CHAMBER 131
Detector : 45-145K1
Calibration Date/Time : 4-APR-2006 17:08:16
Calibration Source Id : AESS-016

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.832
NP-237	4341	2/28/06	4768.800	4767.927
CM-244	4320A	2/28/06	5795.020	5794.474

Energy/Channel Equation : see above
Energy Calibration Zero : 2383.200
Energy Calibration Slope : 4.971618
Energy Calibration Quadratic : 3.1435001E-04
Energy Calibration Range : 7804.000

Instrument : CHAMBER 132
Detector : 45-145K2
Calibration Date/Time : 4-APR-2006 17:08:32
Calibration Source Id : AESS-022

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.897
NP-237	4341	2/28/06	4768.800	4767.248
CM-244	4320A	2/28/06	5795.020	5794.594

Energy/Channel Equation : see above
Energy Calibration Zero : 2374.090
Energy Calibration Slope : 5.015432
Energy Calibration Quadratic : 2.7181130E-04
Energy Calibration Range : 7795.000

Instrument : CHAMBER 133
Detector : 45-145K3
Calibration Date/Time : 4-APR-2006 17:09:47
Calibration Source Id : AESS-017

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.967
NP-237	4341	2/28/06	4768.800	4767.767
CM-244	4320A	2/28/06	5795.020	5794.419

Energy/Channel Equation : see above
Energy Calibration Zero : 2364.883
Energy Calibration Slope : 4.958282
Energy Calibration Quadratic : 2.8459914E-04
Energy Calibration Range : 7741.000

Instrument : CHAMBER 134
Detector : 45-145K4
Calibration Date/Time : 4-APR-2006 17:11:02
Calibration Source Id : AESS-023

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.715
NP-237	4341	2/28/06	4768.800	4767.525
CM-244	4320A	2/28/06	5795.020	5794.621

Energy/Channel Equation : see above
Energy Calibration Zero : 2384.888
Energy Calibration Slope : 4.989409
Energy Calibration Quadratic : 2.7175582E-04
Energy Calibration Range : 7779.000

Instrument : CHAMBER 135
Detector : 45-145K5
Calibration Date/Time : 4-APR-2006 17:11:53
Calibration Source Id : AESS-018

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.833
NP-237	4341	2/28/06	4768.800	4768.171
CM-244	4320A	2/28/06	5795.020	5794.435

Energy/Channel Equation : see above
Energy Calibration Zero : 2394.605
Energy Calibration Slope : 4.968740
Energy Calibration Quadratic : 2.9795556E-04
Energy Calibration Range : 7795.000

Instrument : CHAMBER 136
Detector : 45-145L1
Calibration Date/Time : 4-APR-2006 17:12:12
Calibration Source Id : AESS-024

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.493
NP-237	4341	2/28/06	4768.800	4767.151
CM-244	4320A	2/28/06	5795.020	5794.044

Energy/Channel Equation : see above
Energy Calibration Zero : 2384.309
Energy Calibration Slope : 5.003936
Energy Calibration Quadratic : 2.5798104E-04
Energy Calibration Range : 7779.000

Subsection 2: Background Calibration

Instrument : CHAMBER 001
Detector : 33088
Background Analysis Date/Time : 2-APR-2006 11:38:32
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.456	3298.943	2.000000	0.4799997	70.71068	95.00000
NP-237	4433.436	4903.018	13.00000	3.119998	27.73501	95.00000
CM-244	5530.638	5887.374	28.00000	6.719995	18.89822	95.00000

Instrument : CHAMBER 003
Detector : 20659
Background Analysis Date/Time : 2-APR-2006 11:38:32
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.599	3300.169	5.000000	1.199999	44.72136	95.00000
NP-237	4434.674	4902.844	22.00000	5.279996	21.32007	95.00000
CM-244	5535.248	5883.783	33.00000	7.919994	17.40777	95.00000

Instrument : CHAMBER 004
Detector : 33077
Background Analysis Date/Time : 2-APR-2006 11:38:32
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.545	3299.456	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4433.646	4906.400	4.000000	0.9599993	50.00000	95.00000
CM-244	5531.494	5886.867	18.00000	4.319997	23.57022	95.00000

Instrument : CHAMBER 005
Detector : 28642
Background Analysis Date/Time : 2-APR-2006 11:38:32
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.709	3298.775	3.000000	0.7199995	57.73503	95.00000
NP-237	4434.190	4905.248	19.00000	4.559997	22.94157	95.00000
CM-244	5530.463	5883.921	31.00000	7.439995	17.96053	95.00000

Instrument : CHAMBER 007
Detector : 30416
Background Analysis Date/Time : 2-APR-2006 11:38:33
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.797	3298.358	1.000000	0.2399998	100.0000	95.00000
NP-237	4432.556	4903.394	25.00000	5.999996	20.00000	95.00000
CM-244	5533.897	5887.491	49.00000	11.75999	14.28572	95.00000

Instrument : CHAMBER 009
Detector : 13285
Background Analysis Date/Time : 2-APR-2006 11:38:33
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.740	3302.180	3.000000	0.7199995	57.73503	95.00000
NP-237	4436.826	4904.306	10.00000	2.399998	31.62278	95.00000
CM-244	5530.853	5882.488	30.00000	7.199995	18.25742	95.00000

Instrument : CHAMBER 010
Detector : 33083
Background Analysis Date/Time : 2-APR-2006 11:38:33
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.233	3300.495	1.000000	0.2399998	100.0000	95.00000
NP-237	4435.514	4905.914	11.00000	2.639998	30.15113	95.00000
CM-244	5535.151	5882.345	27.00000	6.479995	19.24501	95.00000

Instrument : CHAMBER 011
Detector : 9537
Background Analysis Date/Time : 2-APR-2006 11:38:33
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.769	3298.475	1.000000	0.2399998	100.0000	95.00000
NP-237	4433.776	4901.438	2.000000	0.4799997	70.71068	95.00000
CM-244	5533.457	5885.193	35.00000	8.399994	16.90309	95.00000

Instrument : CHAMBER 012
Detector : 33085
Background Analysis Date/Time : 2-APR-2006 11:38:33
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.283	3299.978	1.000000	0.2399998	100.0000	95.00000
NP-237	4432.454	4901.598	3.000000	0.7199995	57.73503	95.00000
CM-244	5534.285	5885.751	13.00000	3.119998	27.73501	95.00000

Instrument : CHAMBER 013
Detector : 21084
Background Analysis Date/Time : 2-APR-2006 11:38:34
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.308	3301.307	1.000000	0.2399998	100.0000	95.00000
NP-237	4433.829	4905.476	4.000000	0.9599993	50.00000	95.00000
CM-244	5530.551	5886.625	27.00000	6.479995	19.24501	95.00000

Instrument : CHAMBER 016
Detector : 21086
Background Analysis Date/Time : 2-APR-2006 11:38:34
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.386	3300.792	3.000000	0.7199995	57.73503	95.00000
NP-237	4437.111	4903.407	9.000000	2.159998	33.33334	95.00000
CM-244	5533.819	5884.776	38.00000	9.119993	16.22214	95.00000

Instrument : CHAMBER 017
Detector : 33203
Background Analysis Date/Time : 2-APR-2006 11:38:34
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.693	3298.212	1.000000	0.2399998	100.0000	95.00000
NP-237	4432.905	4905.400	9.000000	2.159998	33.33334	95.00000
CM-244	5532.198	5886.394	44.00000	10.55999	15.07557	95.00000

Instrument : CHAMBER 018
Detector : 21063
Background Analysis Date/Time : 2-APR-2006 11:38:34
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.076	3298.134	1.000000	0.2399998	100.0000	95.00000
NP-237	4433.036	4905.011	4.000000	0.9599993	50.00000	95.00000
CM-244	5535.243	5885.674	34.00000	8.159994	17.14986	95.00000

Instrument : CHAMBER 019
Detector : 23882
Background Analysis Date/Time : 2-APR-2006 11:38:35
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.511	3300.144	16916.00	4059.841	0.7688669	95.00000
NP-237	4435.855	4902.151	5184.000	1244.160	1.388889	95.00000
CM-244	5531.789	5884.041	1897.000	455.2801	2.295970	95.00000

Instrument : CHAMBER 020
Detector : 33093
Background Analysis Date/Time : 2-APR-2006 11:38:35
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.758	3298.111	2.000000	0.4800001	70.71068	95.00000
NP-237	4435.838	4901.523	7.000000	1.680000	37.79645	95.00000
CM-244	5530.915	5883.311	45.00000	10.80000	14.90712	95.00000

Instrument : CHAMBER 021
Detector : 33893
Background Analysis Date/Time : 2-APR-2006 11:38:35
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.969	3300.683	1.000000	0.2400001	100.0000	95.00000
NP-237	4434.165	4904.181	5.000000	1.200000	44.72136	95.00000
CM-244	5533.125	5885.623	21.00000	5.040001	21.82179	95.00000

Instrument : CHAMBER 023
Detector : 22873
Background Analysis Date/Time : 2-APR-2006 11:38:35
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.365	3300.653	2.000000	0.4800001	70.71068	95.00000
NP-237	4432.587	4902.786	9.000000	2.160001	33.33334	95.00000
CM-244	5533.585	5885.616	41.00000	9.840002	15.61738	95.00000

Instrument : CHAMBER 026
Detector : 34427
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.396	3300.299	1.000000	0.2400001	100.0000	95.00000
NP-237	4432.951	4903.551	14.00000	3.360001	26.72612	95.00000
CM-244	5534.085	5882.486	27.00000	6.480001	19.24501	95.00000

Instrument : CHAMBER 027
Detector : 31436
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.641	3298.501	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4435.554	4903.960	9.000000	2.160001	33.33334	95.00000
CM-244	5535.178	5885.600	13.00000	3.120001	27.73501	95.00000

Instrument : CHAMBER 028
Detector : 21056
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.862	3298.519	1.000000	0.2400001	100.0000	95.00000
NP-237	4437.162	4904.527	5.000000	1.200000	44.72136	95.00000
CM-244	5534.678	5884.670	3.000000	0.7200001	57.73503	95.00000

Instrument : CHAMBER 029
Detector : 30419
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.643	3298.009	4.000000	0.9600002	50.00000	95.00000
NP-237	4436.124	4903.513	4.000000	0.9600002	50.00000	95.00000
CM-244	5533.909	5884.139	20.00000	4.800001	22.36068	95.00000

Instrument : CHAMBER 030
Detector : 30420
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.381	3300.032	2.000000	0.4800001	70.71068	95.00000
NP-237	4435.171	4901.399	1.000000	0.2400001	100.0000	95.00000
CM-244	5532.938	5887.226	28.00000	6.720002	18.89822	95.00000

Instrument : CHAMBER 032
Detector : 33207
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.438	3301.011	4.000000	0.9599994	50.00000	95.00000
NP-237	4437.450	4903.298	8.000000	1.919999	35.35534	95.00000
CM-244	5533.518	5886.674	40.00000	9.599994	15.81139	95.00000

Instrument : CHAMBER 033
Detector : 28647
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.128	3301.778	10.00000	2.399998	31.62278	95.00000
NP-237	4433.277	4905.752	9.000000	2.159999	33.33334	95.00000
CM-244	5531.202	5887.135	39.00000	9.359994	16.01282	95.00000

Instrument : CHAMBER 034
Detector : 32697
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.740	3297.727	18.00000	4.319997	23.57022	95.00000
NP-237	4436.424	4906.295	31.00000	7.439995	17.96053	95.00000
CM-244	5532.067	5883.683	33.00000	7.919995	17.40777	95.00000

Instrument : CHAMBER 035
Detector : 29271
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.597	3300.316	1.000000	0.2399998	100.0000	95.00000
NP-237	4435.093	4902.062	25.00000	5.999996	20.00000	95.00000
CM-244	5533.546	5887.289	24.00000	5.759996	20.41241	95.00000

Instrument : CHAMBER 036
Detector : 29275
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.101	3302.011	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4436.212	4902.690	21.00000	5.039997	21.82179	95.00000
CM-244	5530.586	5883.211	28.00000	6.719995	18.89822	95.00000

Instrument : CHAMBER 037
Detector : 32690
Background Analysis Date/Time : 2-APR-2006 11:38:37
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.331	3300.070	3.000000	0.7200001	57.73503	95.00000
NP-237	4435.120	4902.289	15.00000	3.600001	25.81989	95.00000
CM-244	5534.121	5882.713	34.00000	8.160002	17.14986	95.00000

Instrument : CHAMBER 038
Detector : 19323
Background Analysis Date/Time : 2-APR-2006 11:38:37
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.203	3301.129	4.000000	0.9600002	50.00000	95.00000
NP-237	4436.340	4904.950	11.00000	2.640001	30.15113	95.00000
CM-244	5534.574	5885.451	22.00000	5.280001	21.32007	95.00000

Instrument : CHAMBER 040
Detector : 30446
Background Analysis Date/Time : 2-APR-2006 11:38:37
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.636	3301.603	3.000000	0.7200001	57.73503	95.00000
NP-237	4435.733	4904.719	11.00000	2.640001	30.15113	95.00000
CM-244	5532.976	5885.423	19.00000	4.560001	22.94157	95.00000

Instrument : CHAMBER 041
Detector : 22834
Background Analysis Date/Time : 2-APR-2006 11:38:37
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.681	3302.193	2.000000	0.4800001	70.71068	95.00000
NP-237	4432.502	4905.743	8.000000	1.920000	35.35534	95.00000
CM-244	5533.298	5885.604	23.00000	5.520001	20.85144	95.00000

Instrument : CHAMBER 042
Detector : 32695
Background Analysis Date/Time : 2-APR-2006 11:38:37
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.651	3300.194	4.000000	0.9600002	50.00000	95.00000
NP-237	4435.708	4903.810	19.00000	4.560001	22.94157	95.00000
CM-244	5531.417	5883.758	26.00000	6.240001	19.61161	95.00000

Instrument : CHAMBER 043
Detector : 42470
Background Analysis Date/Time : 2-APR-2006 11:38:38
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.168	3298.326	1.000000	0.2399998	100.0000	95.00000
NP-237	4436.901	4902.013	2.000000	0.4799997	70.71068	95.00000
CM-244	5535.121	5886.262	19.00000	4.559997	22.94157	95.00000

Instrument : CHAMBER 044
Detector : 34433
Background Analysis Date/Time : 2-APR-2006 11:38:38
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.004	3298.648	28.00000	6.719995	18.89822	95.00000
NP-237	4433.632	4906.174	35.00000	8.399995	16.90309	95.00000
CM-244	5532.967	5887.129	38.00000	9.119994	16.22214	95.00000

Instrument : CHAMBER 045
Detector : 34430
Background Analysis Date/Time : 2-APR-2006 11:38:38
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.438	3301.033	4.000000	0.9599994	50.00000	95.00000
NP-237	4436.365	4906.490	17.00000	4.079998	24.25356	95.00000
CM-244	5535.004	5886.982	17.00000	4.079998	24.25356	95.00000

Instrument : CHAMBER 046
Detector : 42471
Background Analysis Date/Time : 2-APR-2006 11:38:38
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.741	3299.741	14.00000	3.359998	26.72612	95.00000
NP-237	4435.900	4904.967	49.00000	11.75999	14.28572	95.00000
CM-244	5532.671	5884.488	25.00000	5.999996	20.00000	95.00000

Instrument : CHAMBER 047
Detector : 30449
Background Analysis Date/Time : 2-APR-2006 11:38:38
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.322	3298.103	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4433.780	4903.899	14.00000	3.359998	26.72612	95.00000
CM-244	5532.276	5884.114	29.00000	6.959996	18.56953	95.00000

Instrument : CHAMBER 048
Detector : 42483
Background Analysis Date/Time : 2-APR-2006 11:38:38
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.922	3300.161	1.000000	0.2399998	100.0000	95.00000
NP-237	4434.180	4904.923	20.00000	4.799997	22.36068	95.00000
CM-244	5533.436	5885.010	24.00000	5.759996	20.41241	95.00000

Instrument : CHAMBER 065
Detector : 21087
Background Analysis Date/Time : 2-APR-2006 11:38:39
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.500	3301.569	5.000000	1.199999	44.72136	95.00000
NP-237	4436.593	4904.814	10.00000	2.399998	31.62278	95.00000
CM-244	5533.641	5883.942	18.00000	4.319997	23.57022	95.00000

Instrument : CHAMBER 066
Detector : 38159
Background Analysis Date/Time : 2-APR-2006 11:38:39
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.351	3299.570	1.000000	0.2399998	100.0000	95.00000
NP-237	4435.367	4906.503	12.00000	2.879998	28.86751	95.00000
CM-244	5531.751	5885.195	19.00000	4.559997	22.94157	95.00000

Instrument : CHAMBER 068
Detector : 33204
Background Analysis Date/Time : 2-APR-2006 11:38:39
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.458	3302.482	2.000000	0.4799997	70.71068	95.00000
NP-237	4437.019	4902.188	5.000000	1.199999	44.72136	95.00000
CM-244	5531.579	5884.315	15.00000	3.599998	25.81989	95.00000

Instrument : CHAMBER 069
Detector : 39172
Background Analysis Date/Time : 2-APR-2006 11:38:39
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.937	3302.037	1.000000	0.2399998	100.0000	95.00000
NP-237	4433.758	4901.912	5.000000	1.199999	44.72136	95.00000
CM-244	5535.302	5884.863	13.00000	3.119998	27.73501	95.00000

Instrument : CHAMBER 070
Detector : 33207
Background Analysis Date/Time : 2-APR-2006 11:38:39
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.764	3299.302	3.000000	0.7199996	57.73503	95.00000
NP-237	4432.603	4904.338	13.00000	3.119998	27.73501	95.00000
CM-244	5531.790	5887.167	12.00000	2.879998	28.86751	95.00000

Instrument : CHAMBER 072
Detector : 33210
Background Analysis Date/Time : 2-APR-2006 11:38:40
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.642	3302.500	4.000000	0.9599994	50.00000	95.00000
NP-237	4434.229	4902.517	7.000000	1.679999	37.79645	95.00000
CM-244	5533.565	5883.889	14.00000	3.359998	26.72612	95.00000

Instrument : CHAMBER 073
Detector : 33211
Background Analysis Date/Time : 2-APR-2006 11:38:40
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.209	3299.359	1.000000	0.2399998	100.0000	95.00000
NP-237	4435.813	4905.119	6.000000	1.439999	40.82483	95.00000
CM-244	5530.447	5887.394	15.00000	3.599998	25.81989	95.00000

Instrument : CHAMBER 075
Detector : 29976
Background Analysis Date/Time : 2-APR-2006 11:38:40
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.804	3301.738	1.000000	0.2399998	100.0000	95.00000
NP-237	4436.078	4904.005	18.00000	4.319997	23.57022	95.00000
CM-244	5532.428	5882.500	16.00000	3.839998	25.00000	95.00000

Instrument : CHAMBER 076
Detector : 33213
Background Analysis Date/Time : 2-APR-2006 11:38:40
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.982	3301.271	1.000000	0.2399998	100.0000	95.00000
NP-237	4435.792	4906.032	9.000000	2.159999	33.33334	95.00000
CM-244	5532.284	5884.164	16.00000	3.839998	25.00000	95.00000

Instrument : CHAMBER 077
Detector : 28239
Background Analysis Date/Time : 2-APR-2006 11:38:41
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.320	3302.291	3.000000	0.7200001	57.73503	95.00000
NP-237	4434.458	4904.534	18.00000	4.320001	23.57022	95.00000
CM-244	5534.090	5887.188	14.00000	3.360001	26.72612	95.00000

Instrument : CHAMBER 078
Detector : 34425
Background Analysis Date/Time : 2-APR-2006 11:38:41
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.430	3298.209	2.000000	0.4800001	70.71068	95.00000
NP-237	4433.493	4903.776	8.000000	1.920000	35.35534	95.00000
CM-244	5534.483	5883.260	14.00000	3.360001	26.72612	95.00000

Instrument : CHAMBER 079
Detector : 28408
Background Analysis Date/Time : 2-APR-2006 11:38:41
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.549	3301.048	4.000000	0.9600002	50.00000	95.00000
NP-237	4435.951	4904.750	7.000000	1.680000	37.79645	95.00000
CM-244	5532.313	5884.158	23.00000	5.520001	20.85144	95.00000

Instrument : CHAMBER 080
Detector : 29269
Background Analysis Date/Time : 2-APR-2006 11:38:41
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.355	3300.887	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4437.124	4904.027	11.00000	2.640001	30.15113	95.00000
CM-244	5534.833	5882.541	24.00000	5.760001	20.41241	95.00000

Instrument : CHAMBER 081
Detector : 28243
Background Analysis Date/Time : 2-APR-2006 11:38:41
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.337	3300.967	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4435.244	4901.705	5.000000	1.199999	44.72136	95.00000
CM-244	5534.853	5883.115	9.000000	2.159999	33.33334	95.00000

Instrument : CHAMBER 083
Detector : 34436
Background Analysis Date/Time : 2-APR-2006 11:38:42
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.885	3297.745	2.000000	0.4799997	70.71068	95.00000
NP-237	4435.182	4902.448	13.00000	3.119998	27.73501	95.00000
CM-244	5533.629	5886.856	19.00000	4.559997	22.94157	95.00000

Instrument : CHAMBER 084
Detector : 29953
Background Analysis Date/Time : 2-APR-2006 11:38:42
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.809	3299.845	2.000000	0.4799997	70.71068	95.00000
NP-237	4435.274	4905.090	36.00000	8.639995	16.66667	95.00000
CM-244	5535.465	5886.345	11.00000	2.639998	30.15113	95.00000

Instrument : CHAMBER 085
Detector : 30451
Background Analysis Date/Time : 2-APR-2006 11:38:42
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.388	3298.321	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4434.734	4902.750	2.000000	0.4799997	70.71068	95.00000
CM-244	5530.623	5885.465	16.00000	3.839998	25.00000	95.00000

Instrument : CHAMBER 086
Detector : 29278
Background Analysis Date/Time : 2-APR-2006 11:38:42
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.939	3300.647	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4432.832	4902.859	8.000000	1.919999	35.35534	95.00000
CM-244	5530.458	5886.876	7.000000	1.679999	37.79645	95.00000

Instrument : CHAMBER 087
Detector : 34430
Background Analysis Date/Time : 2-APR-2006 11:38:42
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.850	3299.145	8.000000	1.919999	35.35534	95.00000
NP-237	4433.685	4904.783	101.0000	24.23998	9.950372	95.00000
CM-244	5533.892	5885.860	3.000000	0.7199996	57.73503	95.00000

Instrument : CHAMBER 088
Detector : 30434
Background Analysis Date/Time : 2-APR-2006 11:38:42
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.733	3298.324	1.000000	0.2399998	100.0000	95.00000
NP-237	4434.854	4901.741	3.000000	0.7199996	57.73503	95.00000
CM-244	5531.597	5882.583	6.000000	1.439999	40.82483	95.00000

Instrument : CHAMBER 089
Detector : 21087
Background Analysis Date/Time : 2-APR-2006 11:38:43
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.018	3301.225	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4432.655	4904.531	3.000000	0.7199995	57.73503	95.00000
CM-244	5531.146	5885.550	1.000000	0.2399998	100.0000	95.00000

Instrument : CHAMBER 090
Detector : 38159
Background Analysis Date/Time : 2-APR-2006 11:38:43
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.511	3299.809	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4434.211	4904.337	4.000000	0.9599993	50.00000	95.00000
CM-244	5530.381	5887.548	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 091
Detector : 33205
Background Analysis Date/Time : 2-APR-2006 11:38:43
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.614	3302.446	1.000000	0.2399998	100.0000	95.00000
NP-237	4435.933	4903.299	6.000000	1.439999	40.82483	95.00000
CM-244	5530.786	5885.646	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 092
Detector : 33204
Background Analysis Date/Time : 2-APR-2006 11:38:43
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.837	3299.694	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4434.184	4904.789	3.000000	0.7199995	57.73503	95.00000
CM-244	5534.672	5882.398	1.000000	0.2399998	100.0000	95.00000

Instrument : CHAMBER 093
Detector : 33206
Background Analysis Date/Time : 2-APR-2006 11:38:43
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.432	3297.831	1.000000	0.2399998	100.0000	95.00000
NP-237	4432.503	4906.496	4.000000	0.9599993	50.00000	95.00000
CM-244	5534.120	5886.021	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 094
Detector : 33207
Background Analysis Date/Time : 2-APR-2006 11:38:43
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.673	3298.910	1.000000	0.2399998	100.0000	95.00000
NP-237	4437.305	4902.611	3.000000	0.7199995	57.73503	95.00000
CM-244	5532.741	5886.161	1.000000	0.2399998	100.0000	95.00000

Instrument : CHAMBER 096
Detector : 30429
Background Analysis Date/Time : 2-APR-2006 11:38:44
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.567	3301.392	2.000000	0.4800001	70.71068	95.00000
NP-237	4433.899	4903.007	4.000000	0.9600002	50.00000	95.00000
CM-244	5534.841	5883.364	8.000000	1.920000	35.35534	95.00000

Instrument : CHAMBER 098
Detector : 30431
Background Analysis Date/Time : 2-APR-2006 11:38:44
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.193	3297.595	2.000000	0.4800001	70.71068	95.00000
NP-237	4433.217	4902.776	10.00000	2.400000	31.62278	95.00000
CM-244	5531.761	5884.598	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 099
Detector : 30432
Background Analysis Date/Time : 2-APR-2006 11:38:44
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.302	3301.806	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4434.583	4904.427	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5532.529	5887.439	1.000000	0.2399998	100.0000	95.00000

Instrument : CHAMBER 101
Detector : 31696
Background Analysis Date/Time : 2-APR-2006 11:38:45
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.838	3300.184	2.000000	0.4800001	70.71068	95.00000
NP-237	4437.473	4904.200	4.000000	0.9600002	50.00000	95.00000
CM-244	5533.420	5882.862	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 102
Detector : 30438
Background Analysis Date/Time : 2-APR-2006 11:38:45
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.981	3300.175	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4436.167	4905.013	14.00000	3.360001	26.72612	95.00000
CM-244	5534.874	5885.847	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 103
Detector : 30437
Background Analysis Date/Time : 2-APR-2006 11:38:45
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.494	3300.797	2.000000	0.4800001	70.71068	95.00000
NP-237	4433.628	4906.553	4.000000	0.9600002	50.00000	95.00000
CM-244	5534.963	5885.168	3.000000	0.7200001	57.73503	95.00000

Instrument : CHAMBER 104
Detector : 30436
Background Analysis Date/Time : 2-APR-2006 11:38:45
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.844	3302.458	1.000000	0.2400000	100.0000	95.00000
NP-237	4432.663	4904.432	2.000000	0.4800001	70.71068	95.00000
CM-244	5531.252	5885.942	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 106
Detector : 45382
Background Analysis Date/Time : 2-APR-2006 11:38:45
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.094	3299.001	2.000000	0.4800001	70.71068	95.00000
NP-237	4435.781	4902.986	7.000000	1.680000	37.79645	95.00000
CM-244	5530.755	5886.020	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 107
Detector : 31697
Background Analysis Date/Time : 2-APR-2006 11:38:46
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.547	3299.714	1.000000	0.2400000	100.0000	95.00000
NP-237	4437.183	4902.948	1.000000	0.2400000	100.0000	95.00000
CM-244	5532.612	5885.240	6.000000	1.440000	40.82483	95.00000

Instrument : CHAMBER 109
Detector : 31693
Background Analysis Date/Time : 2-APR-2006 11:38:46
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.084	3299.184	3.000000	0.7200001	57.73503	95.00000
NP-237	4432.535	4905.875	1.000000	0.2400000	100.0000	95.00000
CM-244	5532.554	5883.883	2.000000	0.4800001	70.71068	95.00000

Instrument : CHAMBER 110
Detector : 30447
Background Analysis Date/Time : 2-APR-2006 11:38:46
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.012	3300.888	1.000000	0.2400000	100.0000	95.00000
NP-237	4433.842	4901.474	1.000000	0.2400000	100.0000	95.00000
CM-244	5530.607	5884.669	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 111
Detector : 30448
Background Analysis Date/Time : 2-APR-2006 11:38:46
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.793	3301.004	3.000000	0.7200001	57.73503	95.00000
NP-237	4435.981	4906.484	6.000000	1.440000	40.82483	95.00000
CM-244	5530.639	5883.341	2.000000	0.4800001	70.71068	95.00000

Instrument : CHAMBER 112
Detector : 30449
Background Analysis Date/Time : 2-APR-2006 11:38:46
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.870	3298.269	1.000000	0.2400000	100.0000	95.00000
NP-237	4436.313	4903.586	3.000000	0.7200001	57.73503	95.00000
CM-244	5533.752	5883.818	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 113
Detector : 45-111B4
Background Analysis Date/Time : 2-APR-2006 10:57:16
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.835	3301.848	1.000000	0.2400000	100.0000	95.00000
NP-237	4433.613	4901.946	2.000000	0.4800001	70.71068	95.00000
CM-244	5530.358	5885.560	2.000000	0.4800001	70.71068	95.00000

Instrument : CHAMBER 114
Detector : 45-111B5
Background Analysis Date/Time : 2-APR-2006 10:57:20
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.875	3299.211	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4436.329	4903.130	1.000000	0.2400000	100.0000	95.00000
CM-244	5535.235	5884.346	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 115
Detector : 45-132EE5
Background Analysis Date/Time : 2-APR-2006 10:57:23
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.466	3300.287	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4435.908	4903.427	1.000000	0.2400000	100.0000	95.00000
CM-244	5530.487	5884.796	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 116
Detector : 45-132FF2
Background Analysis Date/Time : 2-APR-2006 10:57:26
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.161	3302.097	1.000000	0.2400000	100.0000	95.00000
NP-237	4435.898	4903.366	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5530.965	5885.878	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 117
Detector : 45-132FF3
Background Analysis Date/Time : 2-APR-2006 10:57:29
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.574	3297.481	2.000000	0.4800001	70.71068	95.00000
NP-237	4432.916	4905.417	3.000000	0.7200001	57.73503	95.00000
CM-244	5531.962	5885.886	2.000000	0.4800001	70.71068	95.00000

Instrument : CHAMBER 118
Detector : 45-132FF4
Background Analysis Date/Time : 2-APR-2006 10:57:33
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.600	3298.996	1.000000	0.2400000	100.0000	95.00000
NP-237	4434.069	4901.807	2.000000	0.4800001	70.71068	95.00000
CM-244	5534.903	5884.430	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 119
Detector : 45-132FF5
Background Analysis Date/Time : 2-APR-2006 10:57:36
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.490	3300.068	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4434.344	4905.254	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5530.554	5884.197	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 120
Detector : 45-142F1
Background Analysis Date/Time : 2-APR-2006 10:57:39
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.710	3300.418	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4437.274	4903.259	1.000000	0.2400000	100.0000	95.00000
CM-244	5533.634	5886.862	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 121
Detector : 45-142J4
Background Analysis Date/Time : 2-APR-2006 10:57:42
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.124	3301.600	1.000000	0.2400000	100.0000	95.00000
NP-237	4434.163	4906.581	1.000000	0.2400000	100.0000	95.00000
CM-244	5533.976	5883.453	2.000000	0.4800001	70.71068	95.00000

Instrument : CHAMBER 122
Detector : 45-142J5
Background Analysis Date/Time : 2-APR-2006 10:57:46
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.061	3298.780	1.000000	0.2400000	100.0000	95.00000
NP-237	4436.620	4903.419	1.000000	0.2400000	100.0000	95.00000
CM-244	5535.258	5884.098	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 123
Detector : 45-142V1
Background Analysis Date/Time : 2-APR-2006 10:57:49
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.387	3299.522	2.000000	0.4800001	70.71068	95.00000
NP-237	4437.442	4903.641	1.000000	0.2400000	100.0000	95.00000
CM-244	5534.110	5887.297	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 124
Detector : 45-142V2
Background Analysis Date/Time : 2-APR-2006 10:57:52
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.443	3297.987	2.000000	0.4800001	70.71068	95.00000
NP-237	4435.559	4902.411	2.000000	0.4800001	70.71068	95.00000
CM-244	5534.467	5883.494	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 125
Detector : 45-142V3
Background Analysis Date/Time : 2-APR-2006 10:57:55
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.436	3301.693	1.000000	0.2400000	100.0000	95.00000
NP-237	4433.216	4903.410	2.000000	0.4800001	70.71068	95.00000
CM-244	5531.615	5883.226	2.000000	0.4800001	70.71068	95.00000

Instrument : CHAMBER 126
Detector : 45-142V5
Background Analysis Date/Time : 2-APR-2006 10:57:59
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.369	3299.131	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4435.618	4902.366	1.000000	0.2400000	100.0000	95.00000
CM-244	5532.732	5885.449	3.000000	0.7200001	57.73503	95.00000

Instrument : CHAMBER 127
Detector : 45-142W1
Background Analysis Date/Time : 2-APR-2006 10:58:02
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.513	3302.392	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4432.606	4903.961	1.000000	0.2400000	100.0000	95.00000
CM-244	5535.216	5883.874	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 128
Detector : 45-142W2
Background Analysis Date/Time : 2-APR-2006 10:58:05
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.584	3299.388	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4434.590	4901.786	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5533.622	5887.583	2.000000	0.4800001	70.71068	95.00000

Instrument : CHAMBER 129
Detector : 45-142W3
Background Analysis Date/Time : 2-APR-2006 10:58:09
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.668	3299.558	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4435.149	4901.376	2.000000	0.4800001	70.71068	95.00000
CM-244	5532.751	5886.867	2.000000	0.4800001	70.71068	95.00000

Instrument : CHAMBER 130
Detector : 45-142W5
Background Analysis Date/Time : 2-APR-2006 10:58:13
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.831	3301.623	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4435.787	4904.916	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5534.223	5884.439	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 131
Detector : 45-145K1
Background Analysis Date/Time : 2-APR-2006 10:58:17
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.369	3298.448	1.000000	0.2400000	100.0000	95.00000
NP-237	4432.591	4905.330	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5532.857	5887.665	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 132
Detector : 45-145K2
Background Analysis Date/Time : 2-APR-2006 10:58:20
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.018	3301.016	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4434.219	4902.195	2.000000	0.4800001	70.71068	95.00000
CM-244	5534.644	5883.351	4.000000	0.9600002	50.00000	95.00000

Instrument : CHAMBER 133
Detector : 45-145K3
Background Analysis Date/Time : 2-APR-2006 10:58:23
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.115	3302.033	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4435.237	4904.688	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5532.486	5884.151	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 134
Detector : 45-145K4
Background Analysis Date/Time : 2-APR-2006 10:58:26
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.530	3301.962	1.000000	0.2400000	100.0000	95.00000
NP-237	4434.547	4905.459	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5534.869	5887.271	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 135
Detector : 45-145K5
Background Analysis Date/Time : 2-APR-2006 10:58:30
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.104	3298.632	1.000000	0.2400000	100.0000	95.00000
NP-237	4434.981	4906.088	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5531.074	5884.261	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 136
Detector : 45-145L1
Background Analysis Date/Time : 2-APR-2006 10:58:33
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.496	3298.473	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4437.582	4903.436	1.000000	0.2400000	100.0000	95.00000
CM-244	5532.704	5884.860	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Subsection 3: Efficiency Calibration

Instrument : CHAMBER 001
Detector : 33088
Standard ID : AESS-001
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:15
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:30:52
Average Efficiency : 0.2781914
Average Efficiency Error : 7.6626688E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2990.456	3298.943	14076.00	0.2746735	1.1824497E-02	65.35928
NP-237	211.8600	28-FEB-2006	4433.436	4903.018	14340.00	0.2819934	1.4295015E-02	71.99430
CM-244	248.8200	28-FEB-2006	5530.638	5887.374	14794.00	0.2795064	1.4163047E-02	64.69388

Instrument : CHAMBER 003
Detector : 20659
Standard ID : AESS-003
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:15
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:32:34
Average Efficiency : 0.2880620
Average Efficiency Error : 7.9304650E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.3600	28-FEB-2006	2988.599	3300.169	14554.00	0.2846224	1.2245077E-02	49.78555
NP-237	211.3800	28-FEB-2006	4434.674	4902.844	14694.00	0.2895928	1.4675476E-02	61.61686
CM-244	248.2800	28-FEB-2006	5535.248	5883.783	15396.00	0.2915129	1.4763834E-02	53.23063

Instrument : CHAMBER 004
Detector : 33077
Standard ID : AESS-004
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:15
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:32:51
Average Efficiency : 0.3098668
Average Efficiency Error : 8.5239913E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2987.545	3299.456	15401.00	0.3014340	1.2955099E-02	59.94693
NP-237	211.2000	28-FEB-2006	4433.646	4906.400	15919.00	0.3140544	1.5898786E-02	66.99142
CM-244	248.1000	28-FEB-2006	5531.494	5886.867	16816.00	0.3186174	1.6119311E-02	64.44215

Instrument : CHAMBER 005
Detector : 28642
Standard ID : AESS-005
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:15
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:33:05
Average Efficiency : 0.3158097
Average Efficiency Error : 8.6822659E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2990.709	3298.775	16078.00	0.3139968	1.3485039E-02	54.11107
NP-237	211.6800	28-FEB-2006	4434.190	4905.248	16264.00	0.3200765	1.6199514E-02	58.77632
CM-244	248.6400	28-FEB-2006	5530.463	5883.921	16620.00	0.3142197	1.5898999E-02	55.82949

Instrument : CHAMBER 007
Detector : 30416
Standard ID : AESS-007
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:16
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:35:21
Average Efficiency : 0.3047189
Average Efficiency Error : 8.3812820E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2990.797	3298.358	15695.00	0.3066845	1.3176420E-02	50.85197
NP-237	211.5600	28-FEB-2006	4432.556	4903.394	15403.00	0.3033007	1.5360770E-02	59.57014
CM-244	248.5200	28-FEB-2006	5533.897	5887.491	16043.00	0.3034657	1.5361345E-02	53.08852

Instrument : CHAMBER 009
Detector : 13285
Standard ID : AESS-009
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:16
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:39:51
Average Efficiency : 0.3341929
Average Efficiency Error : 9.1806399E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6000	28-FEB-2006	2987.740	3302.180	16955.00	0.3312147	1.4212075E-02	53.77267
NP-237	211.6200	28-FEB-2006	4436.826	4904.306	17080.00	0.3362575	1.7008657E-02	68.28894
CM-244	248.5800	28-FEB-2006	5530.853	5882.488	17788.00	0.3363935	1.7007809E-02	56.00669

Instrument : CHAMBER 010
Detector : 33083
Standard ID : AESS-010
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:16
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:40:04
Average Efficiency : 0.3340436
Average Efficiency Error : 9.1786785E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4800	28-FEB-2006	2992.233	3300.495	16676.00	0.3259426	1.3989601E-02	68.92194
NP-237	211.5000	28-FEB-2006	4435.514	4905.914	17301.00	0.3408116	1.7236479E-02	78.65460
CM-244	248.4600	28-FEB-2006	5535.151	5882.345	17946.00	0.3395274	1.7164614E-02	63.81354

Instrument : CHAMBER 011
Detector : 9537
Standard ID : AESS-011
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:16
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:40:58
Average Efficiency : 0.3105724
Average Efficiency Error : 8.5400529E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2988.769	3298.475	15819.00	0.3089387	1.3271471E-02	48.37308
NP-237	211.6800	28-FEB-2006	4433.776	4901.438	15834.00	0.3116739	1.5779305E-02	60.99158
CM-244	248.6400	28-FEB-2006	5533.457	5885.193	16490.00	0.3117799	1.5776988E-02	49.82006

Instrument : CHAMBER 012
Detector : 33085
Standard ID : AESS-012
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:16
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:41:13
Average Efficiency : 0.2681623
Average Efficiency Error : 7.3903115E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.9600	28-FEB-2006	2992.283	3299.978	13668.00	0.2665664	1.1482058E-02	61.90531
NP-237	211.9200	28-FEB-2006	4432.454	4901.598	13787.00	0.2710549	1.3747970E-02	71.13239
CM-244	248.9400	28-FEB-2006	5534.285	5885.751	14169.00	0.2675734	1.3566247E-02	62.43946

Instrument : CHAMBER 013
Detector : 21084
Standard ID : AESS-013
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:17
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:41:26
Average Efficiency : 0.3412675
Average Efficiency Error : 9.3716113E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	220.5600	28-FEB-2006	2992.308	3301.307	17507.00	0.3405094	1.4603521E-02	45.62738
NP-237	212.5200	28-FEB-2006	4433.829	4905.476	17346.00	0.3400816	1.7199026E-02	62.98444
CM-244	249.6600	28-FEB-2006	5530.551	5886.625	18245.00	0.3435482	1.7364752E-02	51.62660

Instrument : CHAMBER 016
Detector : 21086
Standard ID : AESS-016
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:17
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:45:33
Average Efficiency : 0.3303408
Average Efficiency Error : 9.0769110E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2992.386	3300.792	16669.00	0.3255388	1.3972365E-02	50.42868
NP-237	211.6800	28-FEB-2006	4437.111	4903.407	16820.00	0.3310585	1.6748626E-02	58.68690
CM-244	248.6400	28-FEB-2006	5533.819	5884.776	17810.00	0.3367283	1.7024504E-02	54.94007

Instrument : CHAMBER 017
Detector : 33203
Standard ID : AESS-017
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:17
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:45:52
Average Efficiency : 0.2902693
Average Efficiency Error : 7.9895537E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.7200	28-FEB-2006	2988.693	3298.212	15015.00	0.2931568	1.2605052E-02	49.49680
NP-237	211.7400	28-FEB-2006	4432.905	4905.400	14650.00	0.2882629	1.4608623E-02	61.60561
CM-244	248.7000	28-FEB-2006	5532.198	5886.394	15257.00	0.2883977	1.4607739E-02	50.89099

Instrument : CHAMBER 018
Detector : 21063
Standard ID : AESS-018
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:17
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:46:43
Average Efficiency : 0.2559204
Average Efficiency Error : 7.0582652E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.7800	28-FEB-2006	2988.076	3298.134	13144.00	0.2565568	1.1059588E-02	50.10976
NP-237	211.8000	28-FEB-2006	4433.036	4905.011	12933.00	0.2544221	1.2916340E-02	58.60687
CM-244	248.7600	28-FEB-2006	5535.243	5885.674	13576.00	0.2565605	1.3015677E-02	54.43167

Instrument : CHAMBER 019
Detector : 23882
Standard ID : AESS-019
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:18
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 16:46:59
Average Efficiency : 0.2848921
Average Efficiency Error : 7.8617986E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2989.511	3300.144	15017.00	0.2934360	1.2617028E-02	46.50811
NP-237	211.5600	28-FEB-2006	4435.855	4902.151	15150.00	0.2626681	1.3361575E-02	61.07557
CM-244	248.5200	28-FEB-2006	5531.789	5884.041	15932.00	0.3013749	1.5256786E-02	50.77583

Instrument : CHAMBER 020
Detector : 33093
Standard ID : AESS-020
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:18
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 16:47:46
Average Efficiency : 0.3374673
Average Efficiency Error : 9.2702135E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2988.758	3298.111	16991.00	0.3315554	1.4226208E-02	58.22562
NP-237	211.8000	28-FEB-2006	4435.838	4901.523	17420.00	0.3426790	1.7329575E-02	71.40521
CM-244	248.8200	28-FEB-2006	5530.915	5883.311	18048.00	0.3409902	1.7237470E-02	64.18688

Instrument : CHAMBER 021
Detector : 33893
Standard ID : AESS-021
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:18
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 16:48:06
Average Efficiency : 0.3097920
Average Efficiency Error : 8.5189342E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2987.969	3300.683	16019.00	0.3130153	1.3443721E-02	48.52213
NP-237	211.5600	28-FEB-2006	4434.165	4904.181	15665.00	0.3085031	1.5620876E-02	57.03367
CM-244	248.5200	28-FEB-2006	5533.125	5885.623	16217.00	0.3067660	1.5526365E-02	49.52942

Instrument : CHAMBER 023
Detector : 22873
Standard ID : AESS-023
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:18
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 16:49:38
Average Efficiency : 0.2765626
Average Efficiency Error : 7.6345578E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2988.365	3300.653	13199.00	0.2577709	1.1110976E-02	64.03100
NP-237	211.6800	28-FEB-2006	4432.587	4902.786	15014.00	0.2955187	1.4971492E-02	68.68533
CM-244	248.6400	28-FEB-2006	5533.585	5885.616	15406.00	0.2912842	1.4752124E-02	67.86546

Instrument : CHAMBER 026
Detector : 34427
Standard ID : AESS-002
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:51
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 12:02:00
Average Efficiency : 0.3111628
Average Efficiency Error : 5.9400578E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4800	28-FEB-2006	2988.396	3300.299	15946.00	0.3116805	7.0337788E-03	55.54451
NP-237	211.5000	28-FEB-2006	4432.951	4903.551	15774.00	0.3107190	1.5731754E-02	60.78556
CM-244	248.4000	28-FEB-2006	5534.085	5882.486	16328.00	0.3090416	1.5640259E-02	54.94981

Instrument : CHAMBER 027
Detector : 31436
Standard ID : AESS-003
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:51
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 12:02:17
Average Efficiency : 0.2851310
Average Efficiency Error : 5.4681562E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.3600	28-FEB-2006	2990.641	3298.501	14516.00	0.2838850	6.4452491E-03	62.80336
NP-237	211.3800	28-FEB-2006	4435.554	4903.960	14590.00	0.2875520	1.4573419E-02	61.53238
CM-244	248.2800	28-FEB-2006	5535.178	5885.600	15268.00	0.2891185	1.4644115E-02	66.27240

Instrument : CHAMBER 028
Detector : 21056
Standard ID : AESS-004
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:51
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 12:02:41
Average Efficiency : 0.2688177
Average Efficiency Error : 5.1718531E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2991.862	3298.519	13660.00	0.2673638	6.0955230E-03	60.48663
NP-237	211.2000	28-FEB-2006	4437.162	4904.527	13850.00	0.2732216	1.3856977E-02	78.59827
CM-244	248.1000	28-FEB-2006	5534.678	5884.670	14348.00	0.2718943	1.3782959E-02	69.00627

Instrument : CHAMBER 029
Detector : 30419
Standard ID : AESS-005
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:51
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 12:02:56
Average Efficiency : 0.2803768
Average Efficiency Error : 5.3804033E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2991.643	3298.009	14347.00	0.2801967	6.3665169E-03	50.13651
NP-237	211.6800	28-FEB-2006	4436.124	4903.513	14180.00	0.2791024	1.4150602E-02	62.17907
CM-244	248.6400	28-FEB-2006	5533.909	5884.139	14945.00	0.2825924	1.4317507E-02	55.61591

Instrument : CHAMBER 030
Detector : 30420
Standard ID : AESS-006
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:51
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 12:03:11
Average Efficiency : 0.3032622
Average Efficiency Error : 5.7966388E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2992.381	3300.032	15532.00	0.3040040	6.8717906E-03	53.70943
NP-237	211.2000	28-FEB-2006	4435.171	4901.399	15235.00	0.3005646	1.5224237E-02	63.92149
CM-244	248.1000	28-FEB-2006	5532.938	5887.226	15953.00	0.3023090	1.5303830E-02	56.83110

Instrument : CHAMBER 032
Detector : 33207
Standard ID : AESS-008
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:53
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:04:09
Average Efficiency : 0.3210600
Average Efficiency Error : 9.3805837E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2992.438	3301.011	16394.00	0.3199127	1.6193897E-02	48.92264
NP-237	211.8600	28-FEB-2006	4437.450	4903.298	16174.00	0.3180676	1.6098870E-02	62.34297
CM-244	248.8800	28-FEB-2006	5533.518	5886.674	17224.00	0.3253718	1.6456470E-02	58.56594

Instrument : CHAMBER 033
Detector : 28647
Standard ID : AESS-009
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:53
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:04:20
Average Efficiency : 0.3189350
Average Efficiency Error : 9.3192765E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6000	28-FEB-2006	2991.128	3301.778	16210.00	0.3166678	1.6031807E-02	50.20483
NP-237	211.6200	28-FEB-2006	4433.277	4905.752	16119.00	0.3173501	1.6063211E-02	65.81153
CM-244	248.5800	28-FEB-2006	5531.202	5887.135	17074.00	0.3229274	1.6334468E-02	56.14278

Instrument : CHAMBER 034
Detector : 32697
Standard ID : AESS-010
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:53
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:04:32
Average Efficiency : 0.3285644
Average Efficiency Error : 9.5973080E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4800	28-FEB-2006	2987.740	3297.727	16717.00	0.3267508	1.6536236E-02	46.19645
NP-237	211.5000	28-FEB-2006	4436.424	4906.295	16590.00	0.3267619	1.6533978E-02	65.57603
CM-244	248.4600	28-FEB-2006	5532.067	5883.683	17561.00	0.3322987	1.6803153E-02	52.60378

Instrument : CHAMBER 035
Detector : 29271
Standard ID : AESS-011
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:53
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:04:44
Average Efficiency : 0.3070081
Average Efficiency Error : 8.9746779E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2990.597	3300.316	15823.00	0.3090232	1.5649391E-02	58.07399
NP-237	211.6800	28-FEB-2006	4435.093	4902.062	15491.00	0.3048278	1.5437050E-02	77.73704
CM-244	248.6400	28-FEB-2006	5533.546	5887.289	16248.00	0.3072308	1.5549533E-02	61.23973

Instrument : CHAMBER 036
Detector : 29275
Standard ID : AESS-012
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:53
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:04:58
Average Efficiency : 0.3204660
Average Efficiency Error : 9.3638916E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.9600	28-FEB-2006	2990.101	3302.011	16111.00	0.3142187	1.5908994E-02	70.87608
NP-237	211.9200	28-FEB-2006	4436.212	4902.690	16497.00	0.3243046	1.6410707E-02	86.38094
CM-244	248.9400	28-FEB-2006	5530.586	5883.211	17117.00	0.3232544	1.6350558E-02	83.27386

Instrument : CHAMBER 037
Detector : 32690
Standard ID : AESS-013
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:55
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 12:05:37
Average Efficiency : 0.3298278
Average Efficiency Error : 6.2852711E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	220.5600	28-FEB-2006	2990.331	3300.070	16648.00	0.3238085	7.2884769E-03	65.32179
NP-237	212.5200	28-FEB-2006	4435.120	4902.289	17586.00	0.3447773	1.7433835E-02	73.49030
CM-244	249.6600	28-FEB-2006	5534.121	5882.713	18584.00	0.3498755	1.7681209E-02	65.58303

Instrument : CHAMBER 038
Detector : 19323
Standard ID : AESS-014
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:55
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 12:05:48
Average Efficiency : 0.3550652
Average Efficiency Error : 6.7386958E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.9600	28-FEB-2006	2992.203	3301.129	18140.00	0.3537907	7.9244133E-03	44.64486
NP-237	211.9800	28-FEB-2006	4436.340	4904.950	18294.00	0.3595673	1.8173877E-02	68.25054
CM-244	249.0000	28-FEB-2006	5534.574	5885.451	18924.00	0.3572362	1.8049749E-02	49.98671

Instrument : CHAMBER 040
Detector : 30446
Standard ID : AESS-016
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:55
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 12:06:33
Average Efficiency : 0.3232525
Average Efficiency Error : 6.1597549E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2990.636	3301.603	16579.00	0.3237876	7.2898054E-03	47.52289
NP-237	211.6800	28-FEB-2006	4435.733	4904.719	16163.00	0.3181213	1.6101720E-02	60.46703
CM-244	248.6400	28-FEB-2006	5532.976	5885.423	17235.00	0.3258936	1.6482741E-02	51.53939

Instrument	CHAMBER 041
Detector	22834
Standard ID	AESS-017
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	4-APR-2006 07:45:55
Calibration Count Time	240.0000
Efficiency Calibration Date/Time	4-APR-2006 12:06:46
Average Efficiency	0.3322699
Average Efficiency Error	6.3254358E-03
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.7200	28-FEB-2006	2987.681	3302.193	16913.00	0.3302204	7.4258945E-03	49.34238
NP-237	211.7400	28-FEB-2006	4432.502	4905.743	17206.00	0.3385508	1.7123217E-02	64.06297
CM-244	248.7000	28-FEB-2006	5533.298	5885.604	17818.00	0.3368361	1.7029859E-02	51.09551

Instrument	CHAMBER 042
Detector	32695
Standard ID	AESS-018
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	4-APR-2006 07:45:55
Calibration Count Time	240.0000
Efficiency Calibration Date/Time	4-APR-2006 12:07:02
Average Efficiency	0.3361240
Average Efficiency Error	6.3955071E-03
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.7800	28-FEB-2006	2990.651	3300.194	17115.00	0.3340732	7.5073489E-03	62.01425
NP-237	211.8000	28-FEB-2006	4435.708	4903.810	17181.00	0.3379442	1.7092843E-02	71.83335
CM-244	248.7600	28-FEB-2006	5531.417	5883.758	18276.00	0.3453112	1.7453661E-02	58.83952

Instrument	CHAMBER 043
Detector	42470
Standard ID	AESS-019
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	4-APR-2006 07:45:57
Calibration Count Time	239.9998
Efficiency Calibration Date/Time	4-APR-2006 12:07:20
Average Efficiency	0.3229622
Average Efficiency Error	6.1558355E-03
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2988.168	3298.326	16460.00	0.3216395	7.2445576E-03	53.07267
NP-237	211.5600	28-FEB-2006	4436.901	4902.013	16611.00	0.3271490	1.6553231E-02	63.02407
CM-244	248.5200	28-FEB-2006	5535.121	5886.262	17214.00	0.3256539	1.6470846E-02	50.82504

Instrument : CHAMBER 044
Detector : 34433
Standard ID : AESS-020
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:57
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:07:31
Average Efficiency : 0.3240791
Average Efficiency Error : 6.1765807E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2989.004	3298.648	16495.00	0.3218836	7.2491337E-03	50.22718
NP-237	211.8000	28-FEB-2006	4433.632	4906.174	16705.00	0.3285425	1.6622754E-02	66.23325
CM-244	248.8200	28-FEB-2006	5532.967	5887.129	17532.00	0.3312699	1.6751442E-02	56.69666

Instrument : CHAMBER 045
Detector : 34430
Standard ID : AESS-021
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:57
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:07:49
Average Efficiency : 0.2941546
Average Efficiency Error : 5.6320531E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2992.438	3301.033	14988.00	0.2928756	6.6353632E-03	49.71279
NP-237	211.5600	28-FEB-2006	4436.365	4906.490	15086.00	0.2970952	1.5050440E-02	64.58119
CM-244	248.5200	28-FEB-2006	5535.004	5886.982	15743.00	0.2978074	1.5078431E-02	59.00225

Instrument : CHAMBER 046
Detector : 42471
Standard ID : AESS-022
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:57
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:08:03
Average Efficiency : 0.3344716
Average Efficiency Error : 6.3659614E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2987.741	3299.741	16999.00	0.3319905	7.4634906E-03	48.96851
NP-237	211.6800	28-FEB-2006	4435.900	4904.967	17273.00	0.3399139	1.7191468E-02	65.78371
CM-244	248.6400	28-FEB-2006	5532.671	5884.488	18104.00	0.3422939	1.7302830E-02	53.33138

Instrument : CHAMBER 047
Detector : 30449
Standard ID : AESS-023
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:57
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:08:14
Average Efficiency : 0.2966904
Average Efficiency Error : 5.6765815E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2989.322	3298.103	15222.00	0.2972857	6.7285444E-03	49.84683
NP-237	211.6800	28-FEB-2006	4433.780	4903.899	15016.00	0.2955441	1.4972775E-02	59.65280
CM-244	248.6400	28-FEB-2006	5532.276	5884.114	15597.00	0.2948985	1.4932883E-02	51.68388

Instrument : CHAMBER 048
Detector : 42483
Standard ID : AESS-024
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:57
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:08:24
Average Efficiency : 0.3119769
Average Efficiency Error : 5.9553082E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4200	28-FEB-2006	2989.922	3300.161	15954.00	0.3119224	7.0390208E-03	55.83012
NP-237	211.4400	28-FEB-2006	4434.180	4904.923	15787.00	0.3110589	1.5748808E-02	72.44879
CM-244	248.4000	28-FEB-2006	5533.436	5885.010	16547.00	0.3131823	1.5847316E-02	61.06746

Instrument : CHAMBER 065
Detector : 21087
Standard ID : AESS-001
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:10
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:05:24
Average Efficiency : 0.3027465
Average Efficiency Error : 5.7869283E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2992.500	3301.569	15511.00	0.3026739	6.8422910E-03	49.27271
NP-237	211.8600	28-FEB-2006	4436.593	4904.814	15341.00	0.3016613	1.5278513E-02	63.47648
CM-244	248.8200	28-FEB-2006	5533.641	5883.942	16102.00	0.3042169	1.5398668E-02	52.45229

Instrument : CHAMBER 066
Detector : 38159
Standard ID : AESS-002
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:10
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:05:41
Average Efficiency : 0.2898386
Average Efficiency Error : 5.5523221E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4800	28-FEB-2006	2991.351	3299.570	14848.00	0.2902116	6.5790205E-03	54.22055
NP-237	211.5000	28-FEB-2006	4435.367	4906.503	14731.00	0.2901337	1.4702437E-02	64.20898
CM-244	248.4000	28-FEB-2006	5531.751	5885.195	15203.00	0.2877176	1.4573953E-02	57.41096

Instrument : CHAMBER 068
Detector : 33204
Standard ID : AESS-004
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:10
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:06:11
Average Efficiency : 0.2982503
Average Efficiency Error : 5.7051168E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2989.458	3302.482	15312.00	0.2996904	6.7803976E-03	66.72219
NP-237	211.2000	28-FEB-2006	4437.019	4902.188	15036.00	0.2966104	1.5026535E-02	82.73407
CM-244	248.1000	28-FEB-2006	5531.579	5884.315	15461.00	0.2929541	1.4836024E-02	72.39137

Instrument : CHAMBER 069
Detector : 39172
Standard ID : AESS-005
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:10
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:06:22
Average Efficiency : 0.2872442
Average Efficiency Error : 5.5063334E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2991.937	3302.037	14638.00	0.2858726	6.4867456E-03	52.69576
NP-237	211.6800	28-FEB-2006	4433.758	4901.912	14877.00	0.2928176	1.4836427E-02	60.78927
CM-244	248.6400	28-FEB-2006	5535.302	5884.863	15275.00	0.2888012	1.4627955E-02	53.21272

Instrument	CHAMBER 070
Detector	33207
Standard ID	AESS-006
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	3-APR-2006 06:54:10
Calibration Count Time	239.9998
Efficiency Calibration Date/Time	3-APR-2006 12:06:32
Average Efficiency	0.3410026
Average Efficiency Error	6.4845588E-03
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2987.764	3299.302	17333.00	0.3392459	7.6180245E-03	53.32024
NP-237	211.2000	28-FEB-2006	4432.603	4904.338	17596.00	0.3470635	1.7549409E-02	63.32718
CM-244	248.1000	28-FEB-2006	5531.790	5887.167	18166.00	0.3442082	1.7398918E-02	55.68260

Instrument	CHAMBER 072
Detector	33210
Standard ID	AESS-008
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	3-APR-2006 06:54:11
Calibration Count Time	239.9998
Efficiency Calibration Date/Time	3-APR-2006 12:07:20
Average Efficiency	0.2718624
Average Efficiency Error	5.2260533E-03
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2989.642	3302.500	13882.00	0.2708864	6.1688591E-03	78.20691
NP-237	211.8600	28-FEB-2006	4434.229	4902.517	13764.00	0.2706604	1.3728318E-02	68.85778
CM-244	248.8800	28-FEB-2006	5533.565	5883.889	14730.00	0.2782284	1.4099089E-02	58.98390

Instrument	CHAMBER 073
Detector	33211
Standard ID	AESS-009
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	3-APR-2006 06:54:11
Calibration Count Time	239.9998
Efficiency Calibration Date/Time	3-APR-2006 12:07:31
Average Efficiency	0.3248378
Average Efficiency Error	6.1892127E-03
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6000	28-FEB-2006	2990.209	3299.359	16628.00	0.3248250	7.3118629E-03	52.98417
NP-237	211.6200	28-FEB-2006	4435.813	4905.119	16178.00	0.3184740	1.6119437E-02	62.15504
CM-244	248.5800	28-FEB-2006	5530.447	5887.394	17545.00	0.3317996	1.6778087E-02	56.17911

Instrument : CHAMBER 075
Detector : 29976
Standard ID : AESS-011
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:11
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:07:53
Average Efficiency : 0.3238373
Average Efficiency Error : 6.1713755E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2987.804	3301.738	16526.00	0.3227443	7.2676861E-03	50.99773
NP-237	211.6800	28-FEB-2006	4436.078	4904.005	16602.00	0.3267108	1.6531264E-02	64.22369
CM-244	248.6400	28-FEB-2006	5532.428	5882.500	17275.00	0.3266147	1.6518781E-02	59.07774

Instrument : CHAMBER 076
Detector : 33213
Standard ID : AESS-012
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:11
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:08:02
Average Efficiency : 0.3136021
Average Efficiency Error : 5.9847333E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.9600	28-FEB-2006	2990.982	3301.271	16036.00	0.3127477	7.0554069E-03	52.31974
NP-237	211.9200	28-FEB-2006	4435.792	4906.032	16070.00	0.3159233	1.5991600E-02	63.89199
CM-244	248.9400	28-FEB-2006	5532.284	5884.164	16716.00	0.3156649	1.5971025E-02	56.41280

Instrument : CHAMBER 077
Detector : 28239
Standard ID : AESS-013
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:12
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 12:08:16
Average Efficiency : 0.3282876
Average Efficiency Error : 6.2494567E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	220.5600	28-FEB-2006	2990.320	3302.291	16964.00	0.3299461	7.4184034E-03	49.98071
NP-237	212.5200	28-FEB-2006	4434.458	4904.534	16485.00	0.3231252	1.6351206E-02	66.72607
CM-244	249.6600	28-FEB-2006	5534.090	5887.188	17279.00	0.3253554	1.6455045E-02	48.65668

Instrument : CHAMBER 078
Detector : 34425
Standard ID : AESS-014
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:12
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 12:08:26
Average Efficiency : 0.3266231
Average Efficiency Error : 6.2230360E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.9600	28-FEB-2006	2992.430	3298.209	16615.00	0.3240396	7.2945217E-03	49.76765
NP-237	211.9800	28-FEB-2006	4433.493	4903.776	16900.00	0.3321434	1.6802609E-02	62.23470
CM-244	249.0000	28-FEB-2006	5534.483	5883.260	17741.00	0.3349401	1.6934805E-02	53.02275

Instrument : CHAMBER 079
Detector : 28408
Standard ID : AESS-015
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:12
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 12:08:37
Average Efficiency : 0.3381511
Average Efficiency Error : 6.4334050E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2989.549	3301.048	17162.00	0.3348904	7.5245029E-03	58.89482
NP-237	211.8600	28-FEB-2006	4435.951	4904.750	17588.00	0.3458672	1.7488951E-02	69.24126
CM-244	248.8800	28-FEB-2006	5532.313	5884.158	18433.00	0.3481725	1.7596556E-02	62.07035

Instrument : CHAMBER 080
Detector : 29269
Standard ID : AESS-016
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:12
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 12:08:46
Average Efficiency : 0.3413618
Average Efficiency Error : 6.4887921E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2990.355	3300.887	17518.00	0.3421173	7.6778606E-03	54.84035
NP-237	211.6800	28-FEB-2006	4437.124	4904.027	17076.00	0.3360595	1.6998719E-02	70.53491
CM-244	248.6400	28-FEB-2006	5534.833	5882.541	18143.00	0.3430255	1.7339373E-02	59.19316

Instrument : CHAMBER 081
Detector : 28243
Standard ID : AESS-017
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 5-APR-2006 09:52:15
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 5-APR-2006 14:20:00
Average Efficiency : 0.2709154
Average Efficiency Error : 5.2182535E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.7200	28-FEB-2006	2988.337	3300.967	13526.00	0.2640979	6.0252789E-03	74.73094
NP-237	211.7400	28-FEB-2006	4435.244	4901.705	14659.00	0.2884400	1.4617478E-02	76.53771
CM-244	248.7000	28-FEB-2006	5534.853	5883.115	15575.00	0.2944268	1.4909291E-02	67.72768

Instrument : CHAMBER 083
Detector : 34436
Standard ID : AESS-019
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:13
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:09:35
Average Efficiency : 0.3063384
Average Efficiency Error : 5.8566006E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2991.885	3297.745	15476.00	0.3024036	6.8371557E-03	53.97715
NP-237	211.5600	28-FEB-2006	4435.182	4902.448	16168.00	0.3183721	1.6114395E-02	65.19810
CM-244	248.5200	28-FEB-2006	5533.629	5886.856	16706.00	0.3160093	1.5988560E-02	59.26429

Instrument : CHAMBER 084
Detector : 29953
Standard ID : AESS-020
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:13
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:09:48
Average Efficiency : 0.3377420
Average Efficiency Error : 6.4240936E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2988.809	3299.845	17241.00	0.3364322	7.5571463E-03	45.28139
NP-237	211.8000	28-FEB-2006	4435.274	4905.090	17241.00	0.3390163	1.7146526E-02	64.38337
CM-244	248.8200	28-FEB-2006	5535.465	5886.345	18173.00	0.3433445	1.7355187E-02	52.99788

Instrument : CHAMBER 085
Detector : 30451
Standard ID : AESS-021
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:13
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:10:02
Average Efficiency : 0.2997026
Average Efficiency Error : 5.7319975E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2988.388	3298.321	15330.00	0.2995507	6.7767296E-03	51.54943
NP-237	211.5600	28-FEB-2006	4434.734	4902.750	15266.00	0.3006592	1.5228639E-02	59.35664
CM-244	248.5200	28-FEB-2006	5530.623	5885.465	15834.00	0.2995146	1.5163762E-02	54.82895

Instrument : CHAMBER 086
Detector : 29278
Standard ID : AESS-022
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:13
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:10:24
Average Efficiency : 0.2629639
Average Efficiency Error : 5.0652758E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2990.939	3300.647	13365.00	0.2610116	5.9599294E-03	51.29673
NP-237	211.6800	28-FEB-2006	4432.832	4902.859	13621.00	0.2680805	1.3599468E-02	59.09101
CM-244	248.6400	28-FEB-2006	5530.458	5886.876	14175.00	0.2680037	1.3587984E-02	51.32809

Instrument : CHAMBER 087
Detector : 34430
Standard ID : AESS-023
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:13
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:10:36
Average Efficiency : 0.2783446
Average Efficiency Error : 5.3436500E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2988.850	3299.145	14228.00	0.2778656	6.3170986E-03	45.75569
NP-237	211.6800	28-FEB-2006	4433.685	4904.783	14271.00	0.2804829	1.4219985E-02	56.29552
CM-244	248.6400	28-FEB-2006	5533.892	5885.860	14737.00	0.2786293	1.4119316E-02	52.11374

Instrument : CHAMBER 088
Detector : 30434
Standard ID : AESS-024
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:13
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:10:54
Average Efficiency : 0.2708718
Average Efficiency Error : 5.2093272E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4200	28-FEB-2006	2991.733	3298.324	13762.00	0.2690588	6.1309491E-03	70.44978
NP-237	211.4400	28-FEB-2006	4434.854	4901.741	13876.00	0.2734241	1.3866881E-02	84.52332
CM-244	248.4000	28-FEB-2006	5531.597	5882.583	14679.00	0.2778009	1.4078071E-02	70.46585

Instrument : CHAMBER 089
Detector : 21087
Standard ID : AESS-001
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:42
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 23:05:32
Average Efficiency : 0.2906057
Average Efficiency Error : 8.5010817E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2988.018	3301.225	14810.00	0.2889985	1.4647639E-02	48.13472
NP-237	211.8600	28-FEB-2006	4432.655	4904.531	14711.00	0.2893088	1.4660804E-02	59.05686
CM-244	248.8200	28-FEB-2006	5531.146	5885.550	15539.00	0.2935953	1.4867556E-02	51.89399

Instrument : CHAMBER 090
Detector : 38159
Standard ID : AESS-002
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:42
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 23:06:16
Average Efficiency : 0.3262078
Average Efficiency Error : 9.5290253E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4800	28-FEB-2006	2989.511	3299.809	16611.00	0.3246745	1.6432377E-02	43.47319
NP-237	211.5000	28-FEB-2006	4434.211	4904.337	16570.00	0.3264199	1.6516838E-02	66.74939
CM-244	248.4000	28-FEB-2006	5530.381	5887.548	17307.00	0.3275529	1.6565884E-02	47.20604

Instrument : CHAMBER 091
Detector : 33205
Standard ID : AESS-003
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 16:38:39
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 21:06:36
Average Efficiency : 0.3295136
Average Efficiency Error : 9.6244970E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.3600	28-FEB-2006	2988.614	3302.446	16877.00	0.3300617	1.6701948E-02	49.16127
NP-237	211.3800	28-FEB-2006	4435.933	4903.299	16753.00	0.3302219	1.6707057E-02	67.62949
CM-244	248.2800	28-FEB-2006	5530.786	5885.646	17335.00	0.3282727	1.6601983E-02	54.15368

Instrument : CHAMBER 092
Detector : 33204
Standard ID : AESS-004
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:42
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 23:08:02
Average Efficiency : 0.3230760
Average Efficiency Error : 9.4387615E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2991.837	3299.694	16466.00	0.3222808	1.6312918E-02	54.19599
NP-237	211.2000	28-FEB-2006	4434.184	4904.789	16328.00	0.3221140	1.6301801E-02	61.31636
CM-244	248.1000	28-FEB-2006	5534.672	5882.398	17144.00	0.3248603	1.6431469E-02	53.39663

Instrument : CHAMBER 093
Detector : 33206
Standard ID : AESS-005
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:42
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 23:08:14
Average Efficiency : 0.3278230
Average Efficiency Error : 9.5757600E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2991.432	3297.831	16618.00	0.3245451	1.6425749E-02	53.44844
NP-237	211.6800	28-FEB-2006	4432.503	4906.496	16789.00	0.3304530	1.6718345E-02	71.37048
CM-244	248.6400	28-FEB-2006	5534.120	5886.021	17378.00	0.3285792	1.6617021E-02	55.20338

Instrument : CHAMBER 094
Detector : 33207
Standard ID : AESS-006
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:42
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 23:08:34
Average Efficiency : 0.3064194
Average Efficiency Error : 8.9583928E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2991.673	3298.910	15769.00	0.3086388	1.5630580E-02	47.47134
NP-237	211.2000	28-FEB-2006	4437.305	4902.611	15693.00	0.3095863	1.5675372E-02	59.32807
CM-244	248.1000	28-FEB-2006	5532.741	5886.161	15901.00	0.3013068	1.5253706E-02	48.40099

Instrument : CHAMBER 096
Detector : 30429
Standard ID : AESS-008
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:43
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:09:48
Average Efficiency : 0.3211957
Average Efficiency Error : 9.3840715E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2988.567	3301.392	16420.00	0.3204154	1.6219035E-02	48.33763
NP-237	211.8600	28-FEB-2006	4433.899	4903.007	16366.00	0.3218482	1.6287910E-02	62.84891
CM-244	248.8800	28-FEB-2006	5534.841	5883.364	17011.00	0.3213297	1.6254338E-02	53.34020

Instrument : CHAMBER 098
Detector : 30431
Standard ID : AESS-010
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:43
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:10:26
Average Efficiency : 0.3423861
Average Efficiency Error : 9.9960957E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4800	28-FEB-2006	2991.193	3297.595	17461.00	0.3412881	1.7263338E-02	48.27054
NP-237	211.5000	28-FEB-2006	4433.217	4902.776	17377.00	0.3422896	1.7310398E-02	71.89059
CM-244	248.4600	28-FEB-2006	5531.761	5884.598	18159.00	0.3435947	1.7367978E-02	56.75472

Instrument : CHAMBER 099
Detector : 30432
Standard ID : AESS-011
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 16:38:43
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 21:07:16
Average Efficiency : 0.3424250
Average Efficiency Error : 9.9976454E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2989.302	3301.806	17277.00	0.3374230	1.7069872E-02	61.73035
NP-237	211.6800	28-FEB-2006	4434.583	4904.427	17554.00	0.3455301	1.7472234E-02	70.83485
CM-244	248.6400	28-FEB-2006	5532.529	5887.439	18221.00	0.3445468	1.7415471E-02	58.75341

Instrument : CHAMBER 101
Detector : 31696
Standard ID : AESS-013
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:44
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:11:17
Average Efficiency : 0.3289411
Average Efficiency Error : 6.2637404E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	220.5600	28-FEB-2006	2988.838	3300.184	16815.00	0.3270522	7.3571443E-03	74.97670
NP-237	212.5200	28-FEB-2006	4437.473	4904.200	16905.00	0.3314256	1.6766205E-02	82.64299
CM-244	249.6600	28-FEB-2006	5533.420	5882.862	17869.00	0.3364823	1.7011438E-02	82.36337

Instrument : CHAMBER 102
Detector : 30438
Standard ID : AESS-014
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:44
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:11:38
Average Efficiency : 0.3398052
Average Efficiency Error : 6.4618774E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.9600	28-FEB-2006	2990.981	3300.175	17329.00	0.3379689	7.5894571E-03	50.78636
NP-237	211.9800	28-FEB-2006	4436.167	4905.013	17442.00	0.3427780	1.7334390E-02	60.55743
CM-244	249.0000	28-FEB-2006	5534.874	5885.847	18355.00	0.3465500	1.7515350E-02	55.09371

Instrument : CHAMBER 103
Detector : 30437
Standard ID : AESS-015
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:44
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:11:50
Average Efficiency : 0.3428698
Average Efficiency Error : 6.5169050E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2987.494	3300.797	17526.00	0.3419976	7.6749846E-03	52.55986
NP-237	211.8600	28-FEB-2006	4433.628	4906.553	17575.00	0.3456304	1.7477097E-02	70.84139
CM-244	248.8800	28-FEB-2006	5534.963	5885.168	18244.00	0.3446204	1.7418953E-02	56.82663

Instrument : CHAMBER 104
Detector : 30436
Standard ID : AESS-016
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:44
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:12:05
Average Efficiency : 0.3178734
Average Efficiency Error : 6.0614208E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2989.844	3302.458	16342.00	0.3191546	7.1916869E-03	48.79966
NP-237	211.6800	28-FEB-2006	4432.663	4904.432	16000.00	0.3149317	1.5942214E-02	61.83171
CM-244	248.6400	28-FEB-2006	5531.252	5885.942	16635.00	0.3145305	1.5914533E-02	54.39241

Instrument : CHAMBER 106
Detector : 45382
Standard ID : AESS-018
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:44
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:13:35
Average Efficiency : 0.3366815
Average Efficiency Error : 6.4043794E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.7800	28-FEB-2006	2991.094	3299.001	17214.00	0.3360010	7.5481492E-03	67.49383
NP-237	211.8000	28-FEB-2006	4435.781	4902.986	17151.00	0.3373776	1.7064495E-02	78.07959
CM-244	248.7600	28-FEB-2006	5530.755	5886.020	17964.00	0.3394951	1.7162759E-02	66.37016

Instrument : CHAMBER 107
Detector : 31697
Standard ID : AESS-019
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:45
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:13:46
Average Efficiency : 0.3279476
Average Efficiency Error : 6.2480466E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2990.547	3299.714	16632.00	0.3249958	7.3156110E-03	56.35443
NP-237	211.5600	28-FEB-2006	4437.183	4902.948	17025.00	0.3353024	1.6960930E-02	65.36469
CM-244	248.5200	28-FEB-2006	5532.612	5885.240	17789.00	0.3365124	1.7013798E-02	57.27279

Instrument : CHAMBER 109
Detector : 31693
Standard ID : AESS-021
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:45
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:14:12
Average Efficiency : 0.3172656
Average Efficiency Error : 6.0536368E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2988.084	3299.184	16099.00	0.3145808	7.0950659E-03	55.32108
NP-237	211.5600	28-FEB-2006	4432.535	4905.875	16551.00	0.3259623	1.6493894E-02	66.04156
CM-244	248.5200	28-FEB-2006	5532.554	5883.883	17073.00	0.3229679	1.6336529E-02	53.16661

Instrument : CHAMBER 110
Detector : 30447
Standard ID : AESS-022
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 16:38:46
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 21:08:36
Average Efficiency : 0.2903691
Average Efficiency Error : 5.5707125E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2992.012	3300.888	14540.00	0.2839686	6.4464426E-03	65.21424
NP-237	211.6800	28-FEB-2006	4433.842	4901.474	15514.00	0.3053748	1.5464325E-02	67.45113
CM-244	248.6400	28-FEB-2006	5530.607	5884.669	16569.00	0.3133079	1.5853422E-02	61.19852

Instrument	CHAMBER 111
Detector	30448
Standard ID	AESS-023
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	3-APR-2006 18:48:45
Calibration Count Time	240.0000
Efficiency Calibration Date/Time	3-APR-2006 23:15:36
Average Efficiency	0.3388006
Average Efficiency Error	6.4431382E-03
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2987.793	3301.004	17314.00	0.3381375	7.5936201E-03	56.34806
NP-237	211.6800	28-FEB-2006	4435.981	4906.484	17500.00	0.3444386	1.7417673E-02	71.36749
CM-244	248.6400	28-FEB-2006	5530.639	5883.341	17810.00	0.3367471	1.7025441E-02	55.06728

Instrument	CHAMBER 112
Detector	30449
Standard ID	AESS-024
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	3-APR-2006 18:48:45
Calibration Count Time	240.0000
Efficiency Calibration Date/Time	3-APR-2006 23:15:47
Average Efficiency	0.3139323
Average Efficiency Error	5.9938701E-03
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4200	28-FEB-2006	2991.870	3298.269	15891.00	0.3106862	7.0128250E-03	50.73674
NP-237	211.4400	28-FEB-2006	4436.313	4903.586	16308.00	0.3213587	1.6263809E-02	62.04948
CM-244	248.4000	28-FEB-2006	5533.752	5883.818	17126.00	0.3241271	1.6394578E-02	52.78824

Instrument	CHAMBER 113
Detector	45-111B4
Standard ID	AESS-001
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	4-APR-2006 12:00:36
Calibration Count Time	240.0000
Efficiency Calibration Date/Time	4-APR-2006 17:02:58
Average Efficiency	0.3703099
Average Efficiency Error	1.0161426E-02
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2991.835	3301.848	18597.00	0.3629034	1.5549773E-02	64.50990
NP-237	211.8600	28-FEB-2006	4433.613	4901.946	18886.00	0.3714283	1.8767057E-02	90.91785
CM-244	248.8200	28-FEB-2006	5530.358	5885.560	20134.00	0.3804419	1.9210188E-02	71.11305

Instrument : CHAMBER 114
Detector : 45-111B5
Standard ID : AESS-007
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:00:40
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:03:22
Average Efficiency : 0.3901447
Average Efficiency Error : 1.0698882E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2990.875	3299.211	19570.00	0.3824124	1.6373768E-02	64.95810
NP-237	211.5600	28-FEB-2006	4436.329	4903.130	20139.00	0.3966328	2.0027624E-02	80.48977
CM-244	248.5200	28-FEB-2006	5535.235	5884.346	20889.00	0.3951845	1.9947579E-02	69.68978

Instrument : CHAMBER 115
Detector : 45-132EE5
Standard ID : AESS-002
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:00:44
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:03:37
Average Efficiency : 0.3799683
Average Efficiency Error : 1.0422695E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4800	28-FEB-2006	2990.466	3300.287	19152.00	0.3743467	1.6033292E-02	67.16986
NP-237	211.5000	28-FEB-2006	4435.908	4903.427	19268.00	0.3795908	1.9175535E-02	85.64700
CM-244	248.4000	28-FEB-2006	5530.487	5884.796	20541.00	0.3887886	1.9627862E-02	69.09605

Instrument : CHAMBER 116
Detector : 45-132FF2
Standard ID : AESS-008
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:00:47
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:03:51
Average Efficiency : 0.3906634
Average Efficiency Error : 1.0711731E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2988.161	3302.097	19763.00	0.3856568	1.6510434E-02	61.93254
NP-237	211.8600	28-FEB-2006	4435.898	4903.366	20060.00	0.3945222	1.9921809E-02	83.61416
CM-244	248.8800	28-FEB-2006	5530.965	5885.878	20861.00	0.3940839	1.9892277E-02	67.87167

Instrument : CHAMBER 117
Detector : 45-132FF3
Standard ID : AESS-003
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:00:52
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:04:04
Average Efficiency : 0.3838457
Average Efficiency Error : 1.0529065E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.3600	28-FEB-2006	2987.574	3297.481	19157.00	0.3746493	1.6046192E-02	69.46350
NP-237	211.3800	28-FEB-2006	4432.916	4905.417	19746.00	0.3892191	1.9657088E-02	87.03203
CM-244	248.2800	28-FEB-2006	5531.962	5885.886	20722.00	0.3924041	1.9808734E-02	73.89016

Instrument : CHAMBER 118
Detector : 45-132FF4
Standard ID : AESS-009
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:00:56
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:04:21
Average Efficiency : 0.3946549
Average Efficiency Error : 1.0820382E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6000	28-FEB-2006	2989.600	3298.996	19935.00	0.3894384	1.6670343E-02	63.05709
NP-237	211.6200	28-FEB-2006	4434.069	4901.807	20060.00	0.3949601	1.9943934E-02	82.03598
CM-244	248.5800	28-FEB-2006	5534.903	5884.430	21258.00	0.4020683	2.0291740E-02	65.29355

Instrument : CHAMBER 119
Detector : 45-132FF5
Standard ID : AESS-004
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:00:59
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:04:33
Average Efficiency : 0.3958072
Average Efficiency Error : 1.0851006E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2987.490	3300.068	20085.00	0.3931205	1.6826242E-02	64.97130
NP-237	211.2000	28-FEB-2006	4434.344	4905.254	20104.00	0.3966229	2.0027457E-02	79.50690
CM-244	248.1000	28-FEB-2006	5530.554	5884.197	21046.00	0.3988287	2.0130115E-02	68.84389

Instrument : CHAMBER 120
Detector : 45-142F1
Standard ID : AESS-010
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:03
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:05:08
Average Efficiency : 0.3892356
Average Efficiency Error : 1.0674394E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4800	28-FEB-2006	2991.710	3300.418	19511.00	0.3813637	1.6329555E-02	65.80540
NP-237	211.5000	28-FEB-2006	4437.274	4903.259	19969.00	0.3933960	1.9865829E-02	87.35593
CM-244	248.4600	28-FEB-2006	5533.634	5886.862	20972.00	0.3968505	2.0030931E-02	68.58372

Instrument : CHAMBER 121
Detector : 45-142J4
Standard ID : AESS-005
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:07
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:05:19
Average Efficiency : 0.3879517
Average Efficiency Error : 1.0639026E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2988.124	3301.600	19515.00	0.3811294	1.6319472E-02	66.81467
NP-237	211.6800	28-FEB-2006	4434.163	4906.581	19891.00	0.3915263	1.9772179E-02	83.76527
CM-244	248.6400	28-FEB-2006	5533.976	5883.453	20862.00	0.3944832	1.9912424E-02	67.69315

Instrument : CHAMBER 122
Detector : 45-142J5
Standard ID : AESS-011
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:10
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:05:33
Average Efficiency : 0.3964319
Average Efficiency Error : 1.0868002E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2990.061	3298.780	20106.00	0.3926716	1.6806791E-02	65.77823
NP-237	211.6800	28-FEB-2006	4436.620	4903.419	20147.00	0.3965701	2.0024376E-02	83.48605
CM-244	248.6400	28-FEB-2006	5535.258	5884.098	21247.00	0.4017632	2.0276442E-02	70.88770

Instrument : CHAMBER 123
Detector : 45-142V1
Standard ID : AESS-006
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:15
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:05:57
Average Efficiency : 0.3805304
Average Efficiency Error : 1.0439763E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2990.387	3299.522	18959.00	0.3710815	1.5895747E-02	68.66263
NP-237	211.2000	28-FEB-2006	4437.442	4903.641	19446.00	0.3836367	1.9378122E-02	86.99185
CM-244	248.1000	28-FEB-2006	5534.110	5887.297	20682.00	0.3919307	1.9785201E-02	66.84405

Instrument : CHAMBER 124
Detector : 45-142V2
Standard ID : AESS-012
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:18
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:06:12
Average Efficiency : 0.3873872
Average Efficiency Error : 1.0623961E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.9600	28-FEB-2006	2989.443	3297.987	19472.00	0.3797709	1.6261807E-02	64.41782
NP-237	211.9200	28-FEB-2006	4435.559	4902.411	19887.00	0.3909993	1.9745609E-02	86.15575
CM-244	248.9400	28-FEB-2006	5534.467	5883.494	20923.00	0.3951599	1.9946033E-02	70.30408

Instrument : CHAMBER 125
Detector : 45-142V3
Standard ID : AESS-013
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:21
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:06:28
Average Efficiency : 0.3867655
Average Efficiency Error : 1.0609177E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	220.5600	28-FEB-2006	2992.436	3301.693	19282.00	0.3750422	1.6061539E-02	55.83823
NP-237	212.5200	28-FEB-2006	4433.216	4903.410	20074.00	0.3935665	1.9873424E-02	88.64875
CM-244	249.6600	28-FEB-2006	5531.615	5883.226	21143.00	0.3981633	2.0095672E-02	68.92764

Instrument : CHAMBER 126
Detector : 45-142V5
Standard ID : AESS-019
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:25
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:06:44
Average Efficiency : 0.3776715
Average Efficiency Error : 1.0360188E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2988.369	3299.131	19021.00	0.3716846	1.5920833E-02	61.61137
NP-237	211.5600	28-FEB-2006	4435.618	4902.366	19293.00	0.3799706	1.9194474E-02	87.82700
CM-244	248.5200	28-FEB-2006	5532.732	5885.449	20309.00	0.3842119	1.9398922E-02	63.11655

Instrument : CHAMBER 127
Detector : 45-142W1
Standard ID : AESS-014
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:29
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:07:12
Average Efficiency : 0.3934290
Average Efficiency Error : 1.0787830E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.9600	28-FEB-2006	2989.513	3302.392	19757.00	0.3853294	1.6496489E-02	64.47871
NP-237	211.9800	28-FEB-2006	4432.606	4903.961	20292.00	0.3988588	2.0138543E-02	84.68309
CM-244	249.0000	28-FEB-2006	5535.216	5883.874	21190.00	0.4001061	2.0193312E-02	70.60645

Instrument : CHAMBER 128
Detector : 45-142W2
Standard ID : AESS-020
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:34
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:07:27
Average Efficiency : 0.3859246
Average Efficiency Error : 1.0586893E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2989.584	3299.388	19162.00	0.3739288	1.6015276E-02	59.93734
NP-237	211.8000	28-FEB-2006	4434.590	4901.786	20058.00	0.3945944	1.9925477E-02	79.19832
CM-244	248.8200	28-FEB-2006	5533.622	5887.583	20951.00	0.3958796	1.9982109E-02	66.89229

Instrument : CHAMBER 129
Detector : 45-142W3
Standard ID : AESS-015
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:38
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:07:43
Average Efficiency : 0.3895081
Average Efficiency Error : 1.0681822E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2991.668	3299.558	19525.00	0.3810124	1.6314350E-02	61.82140
NP-237	211.8600	28-FEB-2006	4435.149	4901.376	20156.00	0.3964100	2.0016206E-02	81.45658
CM-244	248.8800	28-FEB-2006	5532.751	5886.867	20929.00	0.3953595	1.9956063E-02	71.15770

Instrument : CHAMBER 130
Detector : 45-142W5
Standard ID : AESS-021
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:42
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:07:58
Average Efficiency : 0.3877107
Average Efficiency Error : 1.0633443E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2990.831	3301.623	19394.00	0.3789733	1.6228566E-02	61.42154
NP-237	211.5600	28-FEB-2006	4435.787	4904.916	20099.00	0.3958496	1.9988457E-02	82.39708
CM-244	248.5200	28-FEB-2006	5534.223	5884.439	20760.00	0.3927440	1.9825550E-02	67.39270

Instrument : CHAMBER 131
Detector : 45-145K1
Standard ID : AESS-016
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:46
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:08:16
Average Efficiency : 0.3897060
Average Efficiency Error : 1.0686211E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2989.369	3298.448	19647.00	0.3837073	1.6428316E-02	64.42750
NP-237	211.6800	28-FEB-2006	4432.591	4905.330	20018.00	0.3940307	1.9897401E-02	82.42314
CM-244	248.6400	28-FEB-2006	5532.857	5887.665	20846.00	0.3941807	1.9897297E-02	71.83934

Instrument : CHAMBER 132
Detector : 45-145K2
Standard ID : AESS-022
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:49
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:08:32
Average Efficiency : 0.3905833
Average Efficiency Error : 1.0710652E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2990.018	3301.016	19613.00	0.3830433	1.6400279E-02	65.20789
NP-237	211.6800	28-FEB-2006	4434.219	4902.195	20056.00	0.3947787	1.9934803E-02	89.44299
CM-244	248.6400	28-FEB-2006	5534.644	5883.351	21028.00	0.3976221	2.0069377E-02	68.53607

Instrument : CHAMBER 133
Detector : 45-145K3
Standard ID : AESS-017
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:52
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:09:47
Average Efficiency : 0.3868218
Average Efficiency Error : 1.0608377E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.7200	28-FEB-2006	2989.115	3302.033	19459.00	0.3799319	1.6268853E-02	67.58065
NP-237	211.7400	28-FEB-2006	4435.237	4904.688	19979.00	0.3931513	1.9853372E-02	78.76342
CM-244	248.7000	28-FEB-2006	5532.486	5884.151	20667.00	0.3907017	1.9723292E-02	68.61700

Instrument : CHAMBER 134
Detector : 45-145K4
Standard ID : AESS-023
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:56
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:11:02
Average Efficiency : 0.3909511
Average Efficiency Error : 1.0721575E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2987.530	3301.962	19533.00	0.3814809	1.6334314E-02	58.87649
NP-237	211.6800	28-FEB-2006	4434.547	4905.459	20169.00	0.3970030	2.0046022E-02	84.02620
CM-244	248.6400	28-FEB-2006	5534.869	5887.271	21114.00	0.3992483	2.0150691E-02	67.90365

Instrument : CHAMBER 135
Detector : 45-145K5
Standard ID : AESS-018
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:59
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:11:53
Average Efficiency : 0.3932157
Average Efficiency Error : 1.0781703E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.7800	28-FEB-2006	2990.104	3298.632	19831.00	0.3870894	1.6570982E-02	66.57359
NP-237	211.8000	28-FEB-2006	4434.981	4906.088	20001.00	0.3934731	1.9869408E-02	92.58358
CM-244	248.7600	28-FEB-2006	5531.074	5884.261	21277.00	0.4021365	2.0295015E-02	73.11333

Instrument : CHAMBER 136
Detector : 45-145L1
Standard ID : AESS-024
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:02:04
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:12:12
Average Efficiency : 0.3798372
Average Efficiency Error : 1.0422947E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4200	28-FEB-2006	2988.496	3298.473	18764.00	0.3668631	1.5717393E-02	63.35145
NP-237	211.4400	28-FEB-2006	4437.582	4903.436	19751.00	0.3892161	1.9656880E-02	93.25786
CM-244	248.4000	28-FEB-2006	5532.704	5884.860	20649.00	0.3908328	1.9730078E-02	69.15901

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(803)556-8171

Gamma Spectrometer Geometry Calibration Package

Detector: GAMMA 9 Geometry: CAN

	YES	NO	Comments
1) Is all calibration standard information enclosed for:			
the primary standard certificate?	✓		
the secondard standard(s) documentation?			N/A
the nuclide library used?	✓		
the VMS certificate file?	✓		
2) Is the detector efficiency curve printout included?		✓	
3) Is the efficiency calibration report included and reviewed?	✓		
4) Is the raw count data included for:			
the calibration peak report?	✓		
the calibration verification PEAK report?	✓		
the calibration verification NID report?	✓		
the last instrument background?	✓		
5) Are the calibration verification calculations included?	✓		
6) Are the instrument settings included: amp, HVPS, ADC settings?	✓		

Prepared By: [signature] Date: 7/8/05

Reviewed By: [signature] Date: 7/8/05

EFFECTIVE DATE: 7/8/05

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(803)556-8171

Gamma Spectrometer Front End Electronics Setup

Detector: GAMMA 9

Date Performed: 7/6/05 Performed By: [signature]

High Voltage Power Supply	***Spectroscopy Amplifier***
Model No. 3060 High Voltage 2.50	Model No. 2026 Course Gain 100 Fine Gain 1.17 Time Constant 4 usec Input polarity + BSLR rate N/A BSLR mode N/A Threshold N/A
ADC Model No. 8701 Gain 4K	
AIM Module Model No. N1556 Address 226:1	

Gamma Spectroscopy Calibration Verification

Instrument: Gamma 9 Calibration Date: 7/7/2005

Geometry: CAN Standard Id: 70530-278

Isotope		CALIBRATED ACTIVITY (PCI)	MEASURED ACTIVITY (PCI)	DIFFERENCE %
Am-241		6.2283E+04	6.308E+04	1.28
Cd-109		8.2222E+05	7.802E+05	-5.11
Co-57		1.8996E+04	1.861E+04	-2.03
Ce-139		2.8853E+04	2.894E+04	0.30
Sn-113		4.8141E+04	4.700E+04	-2.37
Cs-137		2.4217E+04	2.257E+04	-6.80
Y-88	1836.06	8.5829E+04	8.411E+04	-2.00
Co-60	1332.5	3.8655E+04	3.540E+04	-8.42
Pb-210		8.1682E+05	7.750E+05	-5.12

Prepared By: Michael Petten Date: 7/8/05

Reviewed By: Scott C Hall Date: 7/8/05

Verified:

VMS Quality Assurance Report V1.3 Generated 7-JUL-2005 05:33:05

QA filename : DKA300:[CANBERRA.GAMMA]QC_BKG_GAMMA9.QAF;1

Sample ID : BKG_GAMMA9 Sample quantity : 1.80 LITER
Sample date : 6-JUL-2005 00:00:00 Acquisition date : 6-JUL-2005 12:48:25
Elapsed live time: 0 16:40:00.00 Elapsed real time: 0 16:44:21.13

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
BACKGROUND (GROSS COUNTS)	8.37E+04	9.18E+04	9.01E+04	
BACKGROUND (CPS)	1.39	1.53	1.50	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: OK Approval Date: 7/7/05

VAX/VMS Nuclide Identification Report Generated 8-JUL-2005 10:56:19.27

```
***************************************************************************
*                         GENERAL ENG. LABS, LLC.                         *
*                            2040 Savage Road                             *
*                          Charleston, SC 29414                           *
***************************************************************************
Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA9_CAN.CNF;1
Sample date        : 1-APR-2005 12:00:00.  Acquisition date : 8-JUL-2005 10:24:25.
Sample ID          : VER_GAMMA9_CAN        Sample quantity  : 1.00000E+00 LITER
Detector name      : GAMMA9                Detector geometry: CAN
Elapsed live time: 0 00:30:00.00           Elapsed real time: 0 00:31:18.32  4.2%
Energy tolerance : 2.00000 KEV             Analyst Initials : AKB
Abundance limit  : 75.00000                Sensitivity      : 3.00000
Batch ID           :                       Detector SN#     : 10017452
Matrix Spike DPM :                         LCS DPM          :
***************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.35*	13298	30580	1.24	72.98	67	11	7.39E+00	2.7	
2	0	59.45*	31453	33883	1.25	99.37	93	13	1.75E+01	1.3	
3	0	72.82*	1337	16853	1.09	126.31	124	7	7.43E-01	16.4	
4	1	82.74*	2378	20894	1.45	146.27	140	36	1.32E+00	10.7	2.70E+02
5	1	87.93*	82259	17293	1.46	156.73	140	36	4.57E+01	0.5	
6	1	92.04*	3689	12024	1.34	165.00	140	36	2.05E+00	6.3	
7	0	122.21	46128	25494	1.33	225.78	220	14	2.56E+01	0.9	
8	0	136.59	5638	15969	1.32	254.74	249	13	3.13E+00	4.8	
9	0	149.55	78	7752	1.25	280.82	280	7	4.35E-02	186.8	
10	0	166.04	48109	21914	1.37	314.04	307	15	2.67E+01	0.8	
11	0	255.35*	1152	7003	1.20	493.91	489	10	6.40E-01	13.9	
12	0	279.34*	26539	12523	1.46	542.24	535	15	1.47E+01	1.1	
13	0	301.65	63	3198	0.49	587.16	587	7	3.49E-02	149.9	
14	4	391.74	32353	4503	1.61	768.62	760	32	1.80E+01	0.7	5.27E+01
15	4	395.83*	2978	5544	2.28	776.86	760	32	1.65E+00	6.8	
16	0	511.05*	548	4008	2.18	1008.95	1004	12	3.04E-01	23.5	
17	7	661.51*	25123	4239	1.76	1312.03	1302	26	1.40E+01	0.8	4.29E+00
18	7	664.13	4995	7869	3.75	1317.32	1302	26	2.78E+00	5.7	
19	0	719.77	164	1865	2.19	1429.39	1427	8	9.09E-02	46.4	
20	0	727.57*	120	1371	1.43	1445.11	1443	6	6.67E-02	49.7	
21	0	750.48	41	1550	0.50	1491.26	1488	7	2.25E-02	162.0	
22	0	788.11	111	2042	1.48	1567.06	1562	10	6.16E-02	76.9	
23	0	813.71	435	2431	1.80	1618.64	1614	11	2.41E-01	22.5	
24	6	897.78*	40220	3479	1.98	1788.01	1778	29	2.23E+01	0.6	7.73E+00
25	6	900.64	6536	5847	3.69	1793.77	1778	29	3.63E+00	4.5	
26	0	1097.19	52	1594	0.94	2189.76	2189	9	2.88E-02	139.2	
27	0	1101.71*	51	875	1.31	2198.87	2197	5	2.82E-02	88.5	
28	0	1173.12	31413	4685	2.20	2342.75	2331	24	1.75E+01	0.8	
29	0	1249.85*	67	462	1.34	2497.35	2495	7	3.75E-02	54.2	
30	0	1317.00*	59	469	1.26	2632.65	2631	5	3.28E-02	56.4	
31	1	1324.84	711	1771	2.54	2648.47	2641	39	3.95E-01	13.0	5.85E+01
32	1	1332.17	25984	1521	2.55	2663.24	2641	39	1.44E+01	0.7	
33	0	1393.47	67	482	1.73	2786.75	2784	7	3.75E-02	55.1	
34	0	1471.39	64	560	1.31	2943.77	2941	8	3.57E-02	64.8	
35	0	1496.32*	37	504	1.41	2994.02	2991	6	2.05E-02	97.3	
36	0	1624.94	63	445	1.43	3253.20	3251	6	3.51E-02	54.2	
37	0	1664.02	54	521	1.35	3331.96	3330	9	3.01E-02	76.8	
38	0	1696.49	39	310	1.40	3397.40	3396	8	2.19E-02	79.3	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1836.04*	27447	1769	2.64	3678.65	3666	27	1.52E+01	0.7	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          General Eng. Labs, LLC.                          *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA9_C     *
* Acquisition date :  8-JUL-2005 10:24:25 Detector SN#     : 10017452       *
* Detector ID       : GAMMA9              Sensitivity      : 3.000          *
* Geometry          : CAN                 Energy tolerance: 2.000          *
* Elapsed live time:    0 00:30:00.00     Abundance limit  : 75.000         *
* Elapsed real time:    0 00:31:18.32     Half life ratio  :  8.000         *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date       :  1-APR-2005 12:00:00 Nuclide Library :                *
* Sample ID         : VER_GAMMA9_CAN       Analyst initials: AKB            *
* Batch Number      :                      Sample Quantity : 1.0000E+00 LITER *
* Recovery          :    1.00000           Carrier Weight :    0.00000      *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
* Standard Weight   :   0.00000                                             *
* CALIB. DATE/TIME :  8-JUL-2005 09:26:09 MS Isotope       :                *
* MSD DPM           :    0.000            MSD Isotope      :                *
* LCS DPM           :    0.000            LCS Isotope      :                *
* LCSD DPM          :    0.000            LCSD Isotope     :                *
*****************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	
CO-57	1.861E+04	1.513E+03	2.031E+02	0.000E+00
CO-60	3.540E+04	2.033E+03	2.139E+02	0.000E+00
Y-88	8.411E+04	4.747E+03	3.728E+02	0.000E+00
CD-109	7.802E+05	1.014E+05	4.989E+03	0.000E+00
SN-113	4.700E+04	3.010E+03	4.225E+02	0.000E+00
CS-137	2.257E+04	1.535E+03	2.552E+02	0.000E+00
CE-139	2.894E+04	1.776E+03	2.709E+02	0.000E+00
HG-203	6.075E+04	4.325E+03	8.262E+02	0.000E+00
PB-210	7.750E+05	8.933E+04	3.491E+04	0.000E+00
AM-241	6.308E+04	7.334E+03	1.189E+03	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/LITER)	K.L. Act error Ided	MDA (pCi/LITER)

VAX/VMS Nuclide Identification Report Generated 8-JUL-2005 10:56:21.09

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA9_CAN.CNF;1
Sample date : 1-APR-2005 12:00:00. Acquisition date : 8-JUL-2005 10:24:25.
Sample ID : VER_GAMMA9_CAN Sample quantity : 1.00000E+00 LITER
Detector name : GAMMA9 Detector geometry: CAN
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:31:18.32 4.2%
Energy tolerance : 2.00000 KEV Analyst Initials : AKB
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 10017452
Matrix Spike DPM : LCS DPM :

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/LITER	Decay Corr pCi/LITER	2-Sigma %Error
CO-57	122.06	46128	85.51*	5.587E+00	1.450E+04	1.861E+04	8.13
	136.47	5638	10.47	5.493E+00	1.472E+04	1.890E+04	12.50
CO-60	1173.24	31413	99.90	1.260E+00	3.746E+04	3.880E+04	6.33
	1332.50	25984	99.98*	1.142E+00	3.417E+04	3.540E+04	5.74
Y-88	898.04	40220	93.40	1.561E+00	4.141E+04	7.828E+04	5.98
	1836.06	27447	99.38*	9.320E-01	4.450E+04	8.411E+04	5.64
CD-109	88.03	82259	3.79*	4.839E+00	6.734E+05	7.802E+05	12.99
SN-113	391.70	32353	64.90*	2.873E+00	2.605E+04	4.700E+04	6.41
CS-137	661.66	25123	85.12*	1.976E+00	2.243E+04	2.257E+04	6.80
CE-139	165.85	48109	80.35*	5.088E+00	1.767E+04	2.894E+04	6.14
HG-203	70.83	1337	4.75	3.642E+00	1.160E+04	4.981E+04	35.96
	72.87	1337	8.00	3.642E+00	6.890E+03	2.957E+04	35.81
	82.60	2378	3.55	4.505E+00	2.232E+04	9.582E+04	26.36
	279.20	26539	77.30*	3.643E+00	1.415E+04	6.075E+04	7.12
PB-210	46.50	13298	4.05*	6.414E-01	7.686E+05	7.750E+05	11.53
AM-241	59.54	31453	35.90*	2.086E+00	6.305E+04	6.308E+04	11.63

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : VER_GAMMA9_CAN Acquisition date : 8-JUL-2005 10:24:25

Total number of lines in spectrum	39	
Number of unidentified lines	24	
Number of lines tentatively identified by NID	15	38.46%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/LITER	Decay Corr pCi/LITER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	1.28	1.450E+04	1.861E+04	0.151E+04	8.13	
CO-60	5.27Y	1.04	3.417E+04	3.540E+04	0.203E+04	5.74	
Y-88	106.63D	1.89	4.450E+04	8.411E+04	0.475E+04	5.64	
CD-109	461.40D	1.16	6.734E+05	7.802E+05	1.014E+05	12.99	
SN-113	115.09D	1.80	2.605E+04	4.700E+04	0.301E+04	6.41	
CS-137	30.00Y	1.01	2.243E+04	2.257E+04	0.154E+04	6.80	
CE-139	137.64D	1.64	1.767E+04	2.894E+04	0.178E+04	6.14	
HG-203	46.60D	4.29	1.415E+04	6.075E+04	0.432E+04	7.12	
PB-210	22.26Y	1.01	7.686E+05	7.750E+05	0.893E+05	11.53	
AM-241	432.20Y	1.00	6.305E+04	6.308E+04	0.733E+04	11.63	
			---------	---------			
	Total Activity :		1.679E+06	1.916E+06			
	Grand Total Activity :		1.679E+06	1.916E+06			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Sample ID : VER_GAMMA9_CAN Acquisition date : 8-JUL-2005 10:24:25

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	92.04	3689	12024	1.34	165.00	140	36	2.05E+00	12.6	5.05E+00	
0	149.55	78	7752	1.25	280.82	280	7	4.35E-02	****	5.33E+00	
0	255.35	1152	7003	1.20	493.91	489	10	6.40E-01	27.8	3.88E+00	
0	301.65	63	3198	0.49	587.16	587	7	3.49E-02	****	3.45E+00	
4	395.83	2978	5544	2.28	776.86	760	32	1.65E+00	13.5	2.85E+00	
0	511.05	548	4008	2.18	1008.95	1004	12	3.04E-01	47.0	2.38E+00	
7	664.13	4995	7869	3.75	1317.32	1302	26	2.78E+00	11.3	1.97E+00	
0	719.77	164	1865	2.19	1429.39	1427	8	9.09E-02	92.9	1.85E+00	
0	727.57	120	1371	1.43	1445.11	1443	6	6.67E-02	99.3	1.84E+00	
0	750.48	41	1550	0.50	1491.26	1488	7	2.25E-02	****	1.80E+00	
0	788.11	111	2042	1.48	1567.06	1562	10	6.16E-02	****	1.73E+00	
0	813.71	435	2431	1.80	1618.64	1614	11	2.41E-01	44.9	1.69E+00	
6	900.64	6536	5847	3.69	1793.77	1778	29	3.63E+00	9.0	1.56E+00	
0	1097.19	52	1594	0.94	2189.76	2189	9	2.88E-02	****	1.33E+00	
0	1101.71	51	875	1.31	2198.87	2197	5	2.82E-02	****	1.33E+00	
0	1249.85	67	462	1.34	2497.35	2495	7	3.75E-02	****	1.20E+00	
0	1317.00	59	469	1.26	2632.65	2631	5	3.28E-02	****	1.15E+00	
1	1324.84	711	1771	2.54	2648.47	2641	39	3.95E-01	26.0	1.15E+00	
0	1393.47	67	482	1.73	2786.75	2784	7	3.75E-02	****	1.10E+00	
0	1471.39	64	560	1.31	2943.77	2941	8	3.57E-02	****	1.06E+00	
0	1496.32	37	504	1.41	2994.02	2991	6	2.05E-02	****	1.05E+00	
0	1624.94	63	445	1.43	3253.20	3251	6	3.51E-02	****	9.95E-01	
0	1664.02	54	521	1.35	3331.96	3330	9	3.01E-02	****	9.81E-01	
0	1696.49	39	310	1.40	3397.40	3396	8	2.19E-02	****	9.70E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 8-JUL-2005 10:56:22.47

```
*****************************************************************************
*                          GENERAL ENG. LABS, LLC.                          *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                             DETECTOR DATA                                 *
*                                                                           *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA9_CAN.CNF;1 *
* Acquisition date : 8-JUL-2005 10:24:25.  Detector SN#     : 10017452      *
* Detector ID      : GAMMA9                Sensitivity      : 3.00000       *
* Geometry         : CAN                   Energy tolerance: 2.00000       *
* Elapsed live time: 0 00:30:00.00         Abundance limit  : 75.00000      *
* Elapsed real time: 0 00:31:18.32         Half life ratio  : 8.00000       *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date      : 1-APR-2005 12:00:00.  Nuclide Library  : CAL           *
* Sample ID        : VER_GAMMA9_CAN        Analyst initials: AKB            *
* Batch Number     :                       Sample Quantity  : 1.00000E+00 LITER *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
*                                                                           *
* CALIB. DATE/TIME : 8-JUL-2005 09:26:09.34MS Isotope      :               *
* MSD DPM          :                       MSD Isotope     :               *
* LCS DPM          :                       LCS Isotope     :               *
*****************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	MDA error	Act/MDA
CO-57	1.861E+04	1.513E+03	2.031E+02	1.614E+01	91.648
CO-60	3.540E+04	2.033E+03	2.139E+02	1.189E+01	165.458
Y-88	8.411E+04	4.747E+03	3.728E+02	2.030E+01	225.597
CD-109	7.802E+05	1.014E+05	4.989E+03	6.470E+02	156.374
SN-113	4.700E+04	3.010E+03	4.225E+02	2.642E+01	111.247
CS-137	2.257E+04	1.535E+03	2.552E+02	1.684E+01	88.422
CE-139	2.894E+04	1.776E+03	2.709E+02	1.604E+01	106.799
HG-203	6.075E+04	4.325E+03	8.262E+02	5.592E+01	73.525
PB-210	7.750E+05	8.933E+04	3.491E+04	3.498E+03	22.203
AM-241	6.308E+04	7.334E+03	1.189E+03	1.345E+02	53.052

VAX/VMS Nuclide Identification Report Generated 8-JUL-2005 09:26:13.68

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GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

****

Configuration : MCA0:[GAMMA]GAMMA9$1
Sample date : 1-APR-2005 12:00:00. Acquisition date : 8-JUL-2005 08:38:47.
Sample ID : CAL_GAMMA9_CAN Sample quantity : 1.00000E+00 LITER
Detector name : GAMMA9 Detector geometry: GAMMA9
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:31:18.55 4.2%
Energy tolerance : 2.00000 KEV Analyst Initials : AKB
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 10017452
Matrix Spike DPM : LCS DPM :

****

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.45	13965	32997	1.32	73.18	68	12	7.76E+00	2.7	
2	0	59.40	32524	36332	1.28	99.27	92	14	1.81E+01	1.4	
3	0	72.91	1241	14594	0.99	126.48	124	6	6.90E-01	15.7	
4	1	82.24	1939	20497	1.45	145.27	138	37	1.08E+00	12.9	2.89E+02
5	1	87.93	83252	16858	1.46	156.73	138	37	4.63E+01	0.5	
6	1	92.40	3970	13148	1.47	165.73	138	37	2.21E+00	6.3	
7	5	122.10	46639	13348	1.42	225.55	217	30	2.59E+01	0.6	5.97E+01
8	5	125.65	4129	15031	2.05	232.69	217	30	2.29E+00	7.0	
9	0	136.63	5670	15894	1.35	254.81	250	13	3.15E+00	4.8	
10	0	166.03	47728	21993	1.35	314.03	307	15	2.65E+01	0.8	
11	0	224.33	235	4763	1.65	431.43	429	6	1.31E-01	46.8	
12	0	234.18	266	6035	2.64	451.27	449	8	1.48E-01	51.1	
13	0	255.26	1400	6039	1.24	493.74	490	9	7.78E-01	10.3	
14	0	279.34	26485	12666	1.44	542.23	535	15	1.47E+01	1.1	
15	0	317.06	129	2189	1.34	618.21	616	5	7.14E-02	55.3	
16	0	391.85	33465	11611	1.51	768.84	761	17	1.86E+01	0.9	
17	0	408.93	114	2910	1.80	803.25	802	8	6.35E-02	82.1	
18	0	510.77	725	4230	2.79	1008.37	1002	13	4.03E-01	18.8	
19	0	586.27	88	1777	1.45	1160.46	1157	6	4.91E-02	76.2	
20	0	635.11	71	1906	1.38	1258.85	1255	6	3.96E-02	97.6	
21	0	661.66	26712	10034	1.74	1312.33	1303	19	1.48E+01	1.1	
22	0	717.85	89	1495	1.07	1425.53	1422	6	4.94E-02	69.6	
23	0	813.64	774	2572	2.06	1618.51	1613	13	4.30E-01	14.0	
24	0	898.07	44419	7678	1.92	1788.59	1778	22	2.47E+01	0.7	
25	0	912.63	88	1888	1.48	1817.92	1814	9	4.86E-02	90.2	
26	0	1037.95	92	1899	1.64	2070.41	2066	11	5.08E-02	92.7	
27	0	1173.15	31337	4626	2.20	2342.81	2331	24	1.74E+01	0.8	
28	0	1269.75	62	474	2.12	2537.45	2534	7	3.47E-02	59.2	
29	0	1324.15	479	2117	3.00	2647.07	2640	14	2.66E-01	20.9	
30	0	1332.41	28509	3390	2.37	2663.72	2653	24	1.58E+01	0.8	
31	0	1348.06	70	619	3.28	2695.25	2690	10	3.90E-02	67.3	
32	0	1352.21	51	453	1.03	2703.61	2699	7	2.83E-02	70.8	
33	0	1423.48	65	306	1.31	2847.22	2845	5	3.61E-02	42.3	
34	0	1450.25	111	481	0.72	2901.17	2898	7	6.14E-02	34.3	
35	0	1612.26	109	773	1.68	3227.66	3225	9	6.07E-02	46.9	
36	0	1694.67	90	318	2.63	3393.73	3390	9	4.98E-02	37.4	
37	0	1786.38	42	241	1.42	3578.57	3573	11	2.33E-02	73.4	
38	0	1815.47	74	381	3.39	3637.20	3632	12	4.13E-02	53.7	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1836.13	27913	1610	2.78	3678.84	3665	29	1.55E+01	0.7	
40	0	1984.41	24	72	0.81	3977.69	3973	9	1.32E-02	67.6	

VMS Calibration Report V1.5 Generated 8-JUL-2005 09:26:09

Configuration : MCA0:[GAMMA]GAMMA9$1
Analyses by : CALIBRATE V1.7,PEAK V16.4
Detector Name : GAMMA9 Energy Calib Time: 8-JUL-2005 09:26:09
Efficiency type : Empirical Effncy Calib Time: 8-JUL-2005 09:26:09
Detector Geometry: GAMMA9 Shelf :

Energy Calibration Report

Energy = 10.11 + 0.4966*Channel + -5.2601E-08*(Channel**2)

Nbr	Centroid Channel	True Energy	Computed Energy	Difference
1	73.18	46.50	46.45	0.052
2	99.27	59.54	59.40	0.138
3	156.73	88.03	87.93	0.101
4	225.56	122.06	122.11	-0.049
5	314.03	165.85	166.03	-0.181
6	768.84	391.70	391.85	-0.145
7	1312.33	661.66	661.66	0.000
8	1788.59	898.04	898.07	-0.026
9	2342.81	1173.24	1173.15	0.093
10	2663.72	1332.50	1332.41	0.086
11	3678.84	1836.06	1836.13	-0.069

FWHM Calibration Report

FWHM = 0.9917 + 3.6239E-02*(Energy**1/2)

Nbr	Energy	True FWHM	Computed FWHM	Difference
1	46.50	1.32	1.24	0.081
2	59.54	1.28	1.27	0.010
3	88.03	1.45	1.33	0.123
4	122.06	1.56	1.39	0.172
5	165.85	1.35	1.46	-0.104
6	391.70	1.51	1.71	-0.202
7	661.66	1.74	1.92	-0.182
8	898.04	1.92	2.08	-0.156
9	1173.24	2.20	2.23	-0.037
10	1332.50	2.37	2.31	0.060
11	1836.06	2.78	2.54	0.235

Efficiency Calibration Report

Eff = exp(a2 + a3*x + a4*x**2 + a5*x**3 + a6*x**4 + a7*x**5), x=ln(a1/energy)

a1	a2	a3	a	a5	a6	a7
941.3	-4.197	0.7995	-4.2787E-02	-0.1276	0.1531	-4.8388E-02

Average Deviation = 1.76 % Reduced Chi-Square = 1.07

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff

1	46.50	6.39E-03	2.60E-04	6.54E-03	-0.58	-2.38

Sample ID : CAL_GAMMA9_CAN Acquisition date : 8-JUL-2005 08:38:47

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff
2	59.54	2.19E-02	7.20E-04	2.10E-02	1.22	4.01
3	88.03	4.61E-02	1.54E-03	4.85E-02	-1.53	-5.10
4	122.06	5.72E-02	1.75E-03	5.59E-02	0.77	2.37
5	165.85	5.06E-02	1.48E-03	5.09E-02	-0.20	-0.59
6	391.70	2.90E-02	7.99E-04	2.87E-02	0.33	0.92
7	661.66	1.96E-02	6.25E-04	1.98E-02	-0.28	-0.91
8	898.04	1.54E-02	4.15E-04	1.56E-02	-0.43	-1.16
9	1173.24	1.27E-02	3.59E-04	1.26E-02	0.39	1.11
10	1332.50	1.15E-02	3.12E-04	1.14E-02	0.18	0.48
11	1836.06	9.29E-03	2.51E-04	9.32E-03	-0.14	-0.37

Approved by: _____ Approval Date: 7 / 8 / 05

Print Time : 14-JUN-2005 17:43:24.41
Certificate file name : DKA300:[CANBERRA.GAMMA]70530-278.CER;1
Certificate title : CAN
Certificate date : 1-APR-2005 12:00:00.00
Certificate quantity : 1.00000E+00

Rcd	Nuclide	Halflife	CAL/ INIT	Energy	Rate	%Abun	Activity (uCi)
1	AM-241	432.20Y	Yes	59.54	8.2730E+02	35.90	6.2283E-02
2	CD-109	462.60D	No	88.03	1.1530E+03	3.79	8.2222E-01
3	Co-57	271.79D	No	122.06	6.0100E+02	85.51	1.8996E-02
4	CE-139	137.60D	No	165.85	8.5780E+02	80.35	2.8853E-02
5	SN-113	115.10D	No	391.70	1.1560E+03	64.90	4.8141E-02
6	CS-137	30.07Y	Yes	661.66	7.6270E+02	85.12	2.4217E-02
7	Y-88	106.60D	No	898.04	3.0220E+03	93.40	8.7447E-02
8	Y-88	106.60D	Yes	1836.06	3.1560E+03	99.38	8.5829E-02
9	Co-60	5.27Y	Yes	1173.24	1.4150E+03	99.90	3.8282E-02
10	CO-60	5.27Y	No	1332.50	1.4300E+03	99.98	3.8655E-02
11	PB-210	22.30Y	No	46.50	1.2240E+03	4.05	8.1682E-01

Library Title :
Library file name : DKA300:[CANBERRA.GAMMA]CAL.NLB;1
Date printed : 8-JUL-2005 17:13:45.13
Number of nuclides : 10
Number of lines : 17

Nuclide Name	Half-Life	Nuclide Type	Key Line	Energy		Abundance
CO-57	271.74D		*	122.06	keV	85.51 %
				136.47	keV	10.47 %
CO-60	5.27Y			1173.24	keV	99.90 %
			*	1332.50	keV	99.98 %
Y-88	106.63D			898.04	keV	93.40 %
			*	1836.06	keV	99.38 %
CD-109	461.40D		*	88.03	keV	3.79 %
SN-113	115.09D		*	391.70	keV	64.90 %
CS-137	30.00Y		*	661.66	keV	85.12 %
CE-139	137.64D		*	165.85	keV	80.35 %
HG-203	46.60D			70.83	keV	4.75 %
				72.87	keV	8.00 %
				82.60	keV	3.55 %
			*	279.20	keV	77.30 %
PB-210	22.26Y		*	46.50	keV	4.05 %
AM-241	432.20Y		*	59.54	keV	35.90 %

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 • U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

70530-278

100 mL Solid in 100 mL Aluminum Can

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 and Pb-210 were calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in US NRC Regulatory Guide 4.15, Revision 1, February 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776.
Density of solid matrix 1.15 g/cc.

Calibration Date: April 1, 2005 12:00 EST

ISOTOPE	GAMMA ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Pb-210	46.5	22.3	y	1224	3.0
Am-241	59.5	432.2	y	827.3	3.0
Cd-109	88	462.6	d	1153	3.3
Co-57	122	271.79	d	601.0	3.0
Ce-139	166	137.6	d	857.8	2.8
Hg-203	279	46.61	d	1856	2.7
Sn-113	392	115.1	d	1156	2.6
Cs-137	662	30.07	y	762.7	3.0
Y-88	898	106.6	d	3022	2.6
Co-60	1173	5.271	y	1415	2.7
Co-60	1332	5.271	y	1430	2.6
Y-88	1836	106.6	d	3156	2.6

P O NUMBER 2832RD, Item 3

SOURCE PREPARED BY: M. Dimitrova
M. Dimitrova, Radiochemist

Q A APPROVED: M. Mc 5-12-05

This standard will expire one year after the calibration date.

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(843)556-8171

Gamma Spectrometer Geometry Calibration Package

Detector: HP Geometry: CAN

		YES	NO	Comments
1)	Is all calibration standard information enclosed for:			
	the primary standard certificate?	✓		
	the secondard standard(s) documentation?			N/A
	the nuclide library used?	✓		
	the VMS certificate file?	✓		
2)	Is the detector efficiency curve printout included?		✓	
3)	Is the efficiency calibration report included and reviewed?	✓		
4)	Is the raw count data included for:			
	the calibration peak report?	✓		
	the calibration verification PEAK report?	✓		
	the calibration verification NID report?	✓		
	the last instrument background?	✓		
5)	Are the calibration verification calculations included?	✓		
6)	Are the instrument settings included:			
	amp, HVPS, ADC settings?	✓		

Prepared By: [signature] Date: 2/3/06

Reviewed By: [signature] Date: 2/3/2006

Effective Date: 2/1/06

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(843)556-8171

Gamma Spectrometer Front End Electronics Setup

Detector: HP

Date Performed: 2/1/06 Performed By: Michael Hibbs 2/1/06

High Voltage Power Supply	***Spectroscopy Amplifier***
Model No. 3106D High Voltage 4000V	Model No. 2026 Course Gain ~~200~~ 10 2/1/06 Fine Gain 0.616 Time Constant 6 μsec. Input polarity positive BSLR rate N/A BSLR mode N/A Threshold N/A
ADC	
Model No. 8701 Gain 4K	
AIM Module	
Model No. ND556 Address NI47D:1	

Gamma Spectroscopy Calibration Verification

Instrument: HP Calibration Date: 2/1/2006

Geometry: CAN Standard Id: 70530-278

Isotope		CALIBRATED ACTIVITY (PCI)	MEASURED ACTIVITY (PCI)	DIFFERENCE %
Pb-210		8.1682E+05	8.297E+05	1.58
Am-241		6.2283E+04	6.564E+04	5.39
Cd-109		8.2222E+05	8.117E+05	-1.28
Co-57		1.8996E+04	1.911E+04	0.60
Ce-139		2.8853E+04	2.872E+04	-0.46
Sn-113		4.8141E+04	4.768E+04	-0.96
Cs-137		2.4217E+04	2.496E+04	3.07
Co-60	1332.5	3.8655E+04	3.885E+04	0.50
Y-88	1836.06	8.5829E+04	8.497E+04	-1.00

Prepared By: [signature] Date: 2/3/06

Reviewed By: [signature] Date: 2/3/2006

VMS Quality Assurance Report V1.3 Generated 29-JAN-2006 10:01:26

QA filename : DKA300:[CANBERRA.GAMMA]QC_BKG_HP.QAF;1

Sample ID : BKG_HP Sample quantity : 1.80 LITER
Sample date : 28-JAN-2006 00:00:00 Acquisition date : 28-JAN-2006 17:18:54
Elapsed live time: 0 16:40:00.00 Elapsed real time: 0 16:40:05.76

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
BACKGROUND (GROSS COUNTS)	1.30E+05	1.43E+05	1.38E+05	
BACKGROUND (CPS)	2.16	2.39	2.30	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: ~MJH Approval Date: 1 / 29 / 06

VAX/VMS Nuclide Identification Report Generated 1-FEB-2006 11:17:29.42

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_HP_CAN.CNF;1
Sample date : 1-APR-2005 12:00:00. Acquisition date : 1-FEB-2006 10:51:38.
Sample ID : VER_HP_CAN Sample quantity : 1.00000E+00 LITER
Detector name : HP Detector geometry: CAN
Elapsed live time: 0 00:25:00.00 Elapsed real time: 0 00:25:22.46 1.5%
Energy tolerance : 2.00000 KEV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 8943324
Matrix Spike DPM : LCS DPM :

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	32.73	245	12417	1.37	66.03	64	6	1.63E-01	72.2	
2	0	46.39*	32137	24439	1.25	93.26	87	11	2.14E+01	1.1	
3	0	59.48*	55491	21989	1.24	119.39	113	13	3.70E+01	0.7	
4	0	66.59*	340	9756	2.19	133.56	131	7	2.27E-01	48.3	
5	0	88.05*	87552	17854	1.23	176.37	171	12	5.84E+01	0.5	
6	0	103.96	200	4598	1.85	208.10	205	6	1.33E-01	54.2	
7	0	122.09	38336	9648	1.25	244.26	238	13	2.56E+01	0.7	
8	0	136.52*	4909	5669	1.22	273.04	268	11	3.27E+00	3.3	
9	0	165.91	23915	7578	1.33	331.66	324	15	1.59E+01	1.0	
10	0	255.21	717	2888	1.48	509.81	506	8	4.78E-01	13.5	
11	0	279.20	1586	3369	1.34	557.67	553	10	1.06E+00	7.3	
12	0	364.67	92	1367	1.33	728.16	726	5	6.13E-02	61.2	
13	0	391.71	14749	4953	1.56	782.11	773	17	9.83E+00	1.4	
14	0	475.85	94	1883	1.54	949.96	947	7	6.27E-02	77.2	
15	0	511.32*	140	1974	1.63	1020.74	1017	9	9.33E-02	58.2	
16	0	547.63	207	1376	2.28	1093.17	1090	8	1.38E-01	31.8	
17	0	576.46	52	1204	1.05	1150.69	1149	7	3.45E-02	112.4	
18	0	661.67	43226	3878	1.90	1320.72	1312	19	2.88E+01	0.6	
19	0	736.50	82	1196	1.48	1470.02	1467	8	5.46E-02	74.0	
20	0	740.37	59	1327	1.44	1477.74	1475	9	3.94E-02	112.0	
21	0	761.23	144	1189	2.01	1519.36	1516	9	9.59E-02	44.2	
22	0	814.12	366	2133	2.40	1624.91	1618	15	2.44E-01	28.0	
23	0	820.53	203	1766	1.64	1637.70	1633	12	1.35E-01	41.9	
24	0	897.99*	17515	3646	2.19	1792.28	1783	19	1.17E+01	1.1	
25	0	947.81*	124	2025	2.72	1891.70	1888	10	8.24E-02	68.6	
26	0	966.12*	174	1464	1.37	1928.23	1925	9	1.16E-01	40.4	
27	0	1003.99	81	896	1.29	2003.81	2002	6	5.43E-02	59.0	
28	0	1048.65	29	1430	2.23	2092.93	2089	10	1.93E-02	245.5	
29	0	1078.68	83	822	0.95	2152.87	2150	6	5.50E-02	56.1	
30	0	1173.22	45526	2606	2.53	2341.55	2329	27	3.04E+01	0.6	
31	0	1247.95	66	280	2.79	2490.71	2488	8	4.40E-02	45.6	
32	1	1324.75	333	657	2.67	2644.00	2632	45	2.22E-01	18.9	1.90E+01
33	1	1332.49	41630	719	2.88	2659.47	2632	45	2.78E+01	0.5	
34	4	1415.19	80	198	1.80	2824.54	2821	21	5.34E-02	30.5	1.68E+00
35	4	1420.36	101	371	3.32	2834.85	2821	21	6.74E-02	41.8	
36	0	1427.30	58	386	4.48	2848.71	2841	14	3.85E-02	73.5	
37	0	1560.27	53	453	3.43	3114.16	3109	12	3.52E-02	81.9	
38	0	1614.81	114	483	6.53	3223.03	3216	17	7.61E-02	45.0	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1836.06	11449	454	3.28	3664.76	3650	32	7.63E+00	1.0	
40	0	2047.96	24	55	2.29	4087.87	4086	5	1.58E-02	47.2	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          General Eng. Labs, LLC.                          *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_HP_CAN       *
* Acquisition date :  1-FEB-2006 10:51:38 Detector SN#     : 8943324        *
* Detector ID       : HP                  Sensitivity      : 3.000          *
* Geometry          : CAN                 Energy tolerance: 2.000          *
* Elapsed live time:    0 00:25:00.00     Abundance limit : 75.000          *
* Elapsed real time:    0 00:25:22.46     Half life ratio :  8.000          *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date       :  1-APR-2005 12:00:00 Nuclide Library :                *
* Sample ID         : VER_HP_CAN           Analyst initials: MJH1           *
* Batch Number      :                      Sample Quantity : 1.0000E+00 LITER *
* Recovery          :    1.00000           Carrier Weight :    0.00000      *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
* Standard Weight   :   0.00000                                             *
* CALIB. DATE/TIME :  1-FEB-2006 10:50:52 MS Isotope       :                *
* MSD DPM           :    0.000            MSD Isotope      :                *
* LCS DPM           :    0.000            LCS Isotope      :                *
* LCSD DPM          :    0.000            LCSD Isotope     :                *
*****************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	
CO-57	1.911E+04	1.220E+03	1.618E+02	0.000E+00
CO-60	3.885E+04	2.119E+03	1.019E+02	0.000E+00
Y-88	8.497E+04	5.090E+03	5.398E+02	0.000E+00
CD-109	8.117E+05	7.256E+04	4.051E+03	0.000E+00
SN-113	4.768E+04	3.278E+03	7.690E+02	0.000E+00
CS-137	2.496E+04	2.126E+03	1.243E+02	0.000E+00
CE-139	2.872E+04	1.816E+03	3.312E+02	0.000E+00
HG-203	5.220E+04	8.360E+03	8.014E+03	0.000E+00
PB-210	8.297E+05	6.714E+04	1.273E+04	0.000E+00
AM-241	6.564E+04	4.726E+03	5.305E+02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/LITER	K.L. Act error) Ided	MDA (pCi/LITER)

VAX/VMS Nuclide Identification Report Generated 1-FEB-2006 11:17:30.86

```
*****************************************************************************
*                          GENERAL ENG. LABS, LLC.                          *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_HP_CAN.CNF;1
Sample date       : 1-APR-2005 12:00:00. Acquisition date : 1-FEB-2006 10:51:38.
Sample ID         : VER_HP_CAN           Sample quantity  : 1.00000E+00 LITER
Detector name     : HP                   Detector geometry: CAN
Elapsed live time: 0 00:25:00.00         Elapsed real time: 0 00:25:22.46  1.5%
Energy tolerance  : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit   : 75.00000             Sensitivity      : 3.00000
Batch ID          :                      Detector SN#     : 8943324
Matrix Spike DPM  :                      LCS DPM          :
*****************************************************************************
```

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/LITER	Decay Corr pCi/LITER	2-Sigma %Error
CO-57	122.06	38336	85.51*	9.227E+00	8.755E+03	1.911E+04	6.38
	136.47	4909	10.47	9.166E+00	9.217E+03	2.012E+04	9.59
CO-60	1173.24	45526	99.90	2.373E+00	3.460E+04	3.863E+04	6.29
	1332.50	41630	99.98*	2.156E+00	3.480E+04	3.885E+04	5.45
Y-88	898.04	17515	93.40	2.938E+00	1.150E+04	8.403E+04	8.94
	1836.06	11449	99.38*	1.785E+00	1.163E+04	8.497E+04	5.99
CD-109	88.03	87552	3.79*	8.120E+00	5.126E+05	8.117E+05	8.94
SN-113	391.70	14749	64.90*	5.422E+00	7.553E+03	4.768E+04	6.87
CS-137	661.66	43226	85.12*	3.737E+00	2.449E+04	2.496E+04	8.52
CE-139	165.85	23915	80.35*	8.718E+00	6.152E+03	2.872E+04	6.32
HG-203	70.83	------	4.75	6.194E+00	------ Line Not Found		------
	72.87	------	8.00	6.489E+00	------ Line Not Found		------
	82.60	------	3.55	7.644E+00	------ Line Not Found		------
	279.20	1586	77.30*	6.710E+00	5.511E+02	5.220E+04	16.02
PB-210	46.50	32137	4.05*	1.769E+00	8.083E+05	8.297E+05	8.09
AM-241	59.54	55491	35.90*	4.248E+00	6.555E+04	6.564E+04	7.20

Flag: "*" = Keyline

Sample ID : VER_HP_CAN
Acquisition date : 1-FEB-2006 10:51:38

Total number of lines in spectrum	40	
Number of unidentified lines	27	
Number of lines tentatively identified by NID	13	32.50%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/LITER	Decay Corr pCi/LITER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	2.18	8.755E+03	1.911E+04	0.122E+04	6.38	
CO-60	5.27Y	1.12	3.480E+04	3.885E+04	0.212E+04	5.45	
Y-88	106.63D	7.31	1.163E+04	8.497E+04	0.509E+04	5.99	
CD-109	461.40D	1.58	5.126E+05	8.117E+05	0.726E+05	8.94	
SN-113	115.09D	6.31	7.553E+03	4.768E+04	0.328E+04	6.87	
CS-137	30.00Y	1.02	2.449E+04	2.496E+04	0.213E+04	8.52	
CE-139	137.64D	4.67	6.152E+03	2.872E+04	0.182E+04	6.32	
HG-203	46.60D	94.7	5.511E+02	5.220E+04	0.836E+04	16.02	
PB-210	22.26Y	1.03	8.083E+05	8.297E+05	0.671E+05	8.09	
AM-241	432.20Y	1.00	6.555E+04	6.564E+04	0.473E+04	7.20	
			---------	---------			
	Total Activity :		1.480E+06	2.004E+06			

Grand Total Activity : 1.480E+06 2.004E+06

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	32.73	245	12417	1.37	66.03	64	6	1.63E-01	****	1.99E-01	
0	66.59	340	9756	2.19	133.56	131	7	2.27E-01	96.5	5.52E+00	
0	103.96	200	4598	1.85	208.10	205	6	1.33E-01	****	8.95E+00	
0	255.21	717	2888	1.48	509.81	506	8	4.78E-01	27.1	7.07E+00	
0	364.67	92	1367	1.33	728.16	726	5	6.13E-02	****	5.68E+00	
0	475.85	94	1883	1.54	949.96	947	7	6.27E-02	****	4.75E+00	
0	511.32	140	1974	1.63	1020.74	1017	9	9.33E-02	****	4.52E+00	
0	547.63	207	1376	2.28	1093.17	1090	8	1.38E-01	63.5	4.30E+00	
0	576.46	52	1204	1.05	1150.69	1149	7	3.45E-02	****	4.14E+00	
0	736.50	82	1196	1.48	1470.02	1467	8	5.46E-02	****	3.44E+00	
0	740.37	59	1327	1.44	1477.74	1475	9	3.94E-02	****	3.43E+00	
0	761.23	144	1189	2.01	1519.36	1516	9	9.59E-02	88.3	3.35E+00	
0	814.12	366	2133	2.40	1624.91	1618	15	2.44E-01	56.1	3.18E+00	
0	820.53	203	1766	1.64	1637.70	1633	12	1.35E-01	83.9	3.16E+00	
0	947.81	124	2025	2.72	1891.70	1888	10	8.24E-02	****	2.81E+00	
0	966.12	174	1464	1.37	1928.23	1925	9	1.16E-01	80.9	2.77E+00	
0	1003.99	81	896	1.29	2003.81	2002	6	5.43E-02	****	2.69E+00	
0	1048.65	29	1430	2.23	2092.93	2089	10	1.93E-02	****	2.59E+00	
0	1078.68	83	822	0.95	2152.87	2150	6	5.50E-02	****	2.54E+00	
0	1247.95	66	280	2.79	2490.71	2488	8	4.40E-02	91.2	2.26E+00	
1	1324.75	333	657	2.67	2644.00	2632	45	2.22E-01	37.7	2.16E+00	
4	1415.19	80	198	1.80	2824.54	2821	21	5.34E-02	60.9	2.07E+00	
4	1420.36	101	371	3.32	2834.85	2821	21	6.74E-02	83.6	2.06E+00	
0	1427.30	58	386	4.48	2848.71	2841	14	3.85E-02	****	2.05E+00	
0	1560.27	53	453	3.43	3114.16	3109	12	3.52E-02	****	1.94E+00	
0	1614.81	114	483	6.53	3223.03	3216	17	7.61E-02	89.9	1.90E+00	
0	2047.96	24	55	2.29	4087.87	4086	5	1.58E-02	94.4	1.73E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 1-FEB-2006 11:17:32.49

```
*****************************************************************************
*                          GENERAL ENG. LABS, LLC.                          *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                             DETECTOR DATA                                 *
*                                                                           *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_HP_CAN.CNF;1  *
* Acquisition date : 1-FEB-2006 10:51:38.  Detector SN#     : 8943324       *
* Detector ID      : HP                    Sensitivity      : 3.00000       *
* Geometry         : CAN                   Energy tolerance: 2.00000       *
* Elapsed live time: 0 00:25:00.00         Abundance limit  : 75.00000      *
* Elapsed real time: 0 00:25:22.46         Half life ratio  : 8.00000       *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date      : 1-APR-2005 12:00:00.  Nuclide Library : CAL            *
* Sample ID        : VER_HP_CAN            Analyst initials: MJH1           *
* Batch Number     :                       Sample Quantity : 1.00000E+00 LITER *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
*                                                                           *
* CALIB. DATE/TIME : 1-FEB-2006 10:50:52.50MS Isotope      :               *
* MSD DPM          :                       MSD Isotope     :               *
* LCS DPM          :                       LCS Isotope     :               *
*****************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	MDA error	Act/MDA
CO-57	1.911E+04	1.220E+03	1.618E+02	1.005E+01	118.068
CO-60	3.885E+04	2.119E+03	1.019E+02	5.457E+00	381.402
Y-88	8.497E+04	5.090E+03	5.398E+02	3.030E+01	157.415
CD-109	8.117E+05	7.256E+04	4.051E+03	3.602E+02	200.379
SN-113	4.768E+04	3.278E+03	7.690E+02	4.849E+01	62.005
CS-137	2.496E+04	2.126E+03	1.243E+02	1.048E+01	200.773
CE-139	2.872E+04	1.816E+03	3.312E+02	1.982E+01	86.719
HG-203	5.220E+04	8.360E+03	8.014E+03	5.324E+02	6.514
PB-210	8.297E+05	6.714E+04	1.273E+04	9.838E+02	65.201
AM-241	6.564E+04	4.726E+03	5.305E+02	3.746E+01	123.731

VAX/VMS Nuclide Identification Report Generated 1-FEB-2006 10:50:55.46

****

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

****

Configuration : MCA0:[GAMMA]HP$1
Sample date : 1-APR-2005 12:00:00. Acquisition date : 1-FEB-2006 10:22:53.
Sample ID : CAL_HP_CAN Sample quantity : 1.00000E+00 LITER
Detector name : HP Detector geometry: HP
Elapsed live time: 0 00:25:00.00 Elapsed real time: 0 00:25:22.53 1.5%
Energy tolerance : 2.00000 KEV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 8943324
Matrix Spike DPM : LCS DPM :

****

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	27.90	2035	11434	2.04	56.38	55	6	1.36E+00	8.5	
2	0	33.31	468	16542	1.23	67.18	64	8	3.12E-01	47.9	
3	0	40.55	119	9343	0.68	81.62	80	4	7.91E-02	115.5	
4	0	46.40	31917	26612	1.23	93.29	87	12	2.13E+01	1.2	
5	6	57.94	2724	16246	1.73	116.31	112	14	1.82E+00	9.9	3.62E+00
6	6	59.54	53097	11581	1.18	119.51	112	14	3.54E+01	0.6	
7	0	66.91	277	10156	1.11	134.20	132	7	1.85E-01	60.5	
8	0	88.05	88234	18051	1.23	176.37	171	12	5.88E+01	0.5	
9	0	122.09	38137	10034	1.25	244.26	238	13	2.54E+01	0.7	
10	0	136.46	4694	6057	1.33	272.92	268	11	3.13E+00	3.5	
11	0	165.91	24085	7079	1.28	331.67	325	14	1.61E+01	1.0	
12	0	206.46	126	3423	1.00	412.55	409	8	8.39E-02	81.1	
13	0	255.43	561	3364	1.20	510.24	506	9	3.74E-01	19.1	
14	0	279.28	1768	3496	1.51	557.82	553	11	1.18E+00	6.9	
15	0	367.77	149	1515	1.62	734.34	732	6	9.93E-02	42.3	
16	0	391.71	14799	3908	1.58	782.11	776	14	9.87E+00	1.2	
17	0	423.62	149	1820	1.65	845.76	843	7	9.91E-02	48.3	
18	0	434.47	134	2108	1.44	867.41	864	8	8.94E-02	60.0	
19	0	469.96	39	2287	0.97	938.22	937	8	2.57E-02	215.6	
20	0	511.30	271	2203	2.03	1020.69	1016	10	1.81E-01	33.0	
21	0	518.69	66	1636	0.84	1035.43	1033	8	4.41E-02	106.4	
22	0	524.25	126	1287	1.31	1046.53	1043	7	8.41E-02	48.1	
23	0	661.66	43107	4417	1.88	1320.69	1311	20	2.87E+01	0.6	
24	0	673.55	80	1006	0.95	1344.42	1342	6	5.35E-02	63.5	
25	0	678.55	34	1344	1.31	1354.39	1352	8	2.28E-02	186.3	
26	0	700.41	148	1408	2.43	1398.01	1394	9	9.90E-02	46.4	
27	0	718.36	67	759	1.20	1433.84	1432	5	4.49E-02	62.7	
28	0	886.00	52	1256	1.01	1768.35	1765	7	3.49E-02	112.8	
29	0	898.05	17614	3777	2.10	1792.39	1782	21	1.17E+01	1.2	
30	0	948.56	74	2148	1.09	1893.18	1890	10	4.95E-02	117.3	
31	0	1004.07	120	1162	1.14	2003.97	2000	8	8.01E-02	50.1	
32	0	1068.07	134	906	2.19	2131.69	2129	7	8.92E-02	38.4	
33	0	1112.46	97	1318	2.71	2220.29	2218	9	6.48E-02	68.0	
34	0	1173.22	45712	2394	2.54	2341.55	2329	27	3.05E+01	0.6	
35	0	1204.29	55	426	1.61	2403.58	2399	8	3.67E-02	66.5	
36	0	1267.17	67	294	1.32	2529.07	2526	9	4.49E-02	47.6	
37	1	1325.25	248	706	2.67	2645.00	2634	39	1.65E-01	26.8	2.14E+01
38	1	1332.49	41550	796	2.85	2659.47	2634	39	2.77E+01	0.5	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1359.30	36	275	0.96	2712.98	2711	9	2.41E-02	83.7	
40	0	1836.08	11532	379	3.22	3664.79	3650	32	7.69E+00	1.0	

VMS Calibration Report V1.5 Generated 1-FEB-2006 10:50:52

Configuration : MCA0:[GAMMA]HP$1
Analyses by : CALIBRATE V1.7,PEAK V16.4
Detector Name : HP
Energy Calib Time: 1-FEB-2006 10:50:52
Efficiency type : Empirical
Effncy Calib Time: 1-FEB-2006 10:50:52
Detector Geometry: HP
Shelf :

Energy Calibration Report

Energy = -0.3724 + 0.5014*Channel + -7.2505E-08*(Channel**2)

Nbr	Centroid Channel	True Energy	Computed Energy	Difference
1	93.29	46.50	46.40	0.100
2	119.51	59.54	59.55	-0.008
3	176.37	88.03	88.05	-0.018
4	244.26	122.06	122.09	-0.025
5	331.67	165.85	165.91	-0.057
6	782.11	391.70	391.71	-0.011
7	1320.69	661.66	661.66	0.004
8	1792.39	898.04	898.05	-0.005
9	2341.55	1173.24	1173.22	0.021
10	2659.46	1332.50	1332.49	0.010
11	3664.79	1836.06	1836.08	-0.012

FWHM Calibration Report

FWHM = 0.6537 + 5.5499E-02*(Energy**1/2)

Nbr	Energy	True FWHM	Computed FWHM	Difference
1	46.50	1.23	1.03	0.197
2	59.54	1.18	1.08	0.095
3	88.03	1.23	1.17	0.060
4	122.06	1.25	1.27	-0.016
5	165.85	1.28	1.37	-0.084
6	391.70	1.58	1.75	-0.177
7	661.66	1.88	2.08	-0.203
8	898.04	2.10	2.32	-0.218
9	1173.24	2.54	2.55	-0.013
10	1332.50	2.85	2.68	0.168
11	1836.06	3.22	3.03	0.191

Efficiency Calibration Report

Eff = exp(a2 + a3*x + a4*x**2 + a5*x**3 + a6*x**4 + a7*x**5), x=ln(a1/energy)

a1	a2	a3	a	a5	a6	a7
941.3	-3.565	0.8065	-3.0966E-03	-0.1656	0.1290	-3.6197E-02

Average Deviation = 0.939 % Reduced Chi-Square = 0.520

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff

1	46.50	1.78E-02	5.74E-04	1.79E-02	-0.07	-0.22

Sample ID : CAL_HP_CAN Acquisition date : 1-FEB-2006 10:22:53

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff
2	59.54	4.28E-02	1.31E-03	4.26E-02	0.17	0.51
3	88.03	8.07E-02	2.69E-03	8.12E-02	-0.18	-0.61
4	122.06	9.23E-02	2.85E-03	9.23E-02	0.02	0.05
5	165.85	8.74E-02	2.59E-03	8.72E-02	0.09	0.26
6	391.70	5.39E-02	1.55E-03	5.42E-02	-0.23	-0.65
7	661.66	3.84E-02	1.18E-03	3.74E-02	0.89	2.72
8	898.04	2.84E-02	8.08E-04	2.94E-02	-1.20	-3.43
9	1173.24	2.40E-02	6.63E-04	2.37E-02	0.48	1.31
10	1332.50	2.16E-02	5.73E-04	2.16E-02	0.12	0.32
11	1836.06	1.78E-02	4.98E-04	1.79E-02	-0.09	-0.25

Approved by: Michael Mitton Approval Date: 2 / 3 / 06

Print Time : 14-JUN-2005 17:43:24.41
Certificate file name : DKA300:[CANBERRA.GAMMA]70530-278.CER;1
Certificate title : CAN
Certificate date : 1-APR-2005 12:00:00.00
Certificate quantity : 1.00000E+00

Rcd	Nuclide	Halflife	CAL/ INIT	Energy	Rate	%Abun	Activity (uCi)
1	AM-241	432.20Y	Yes	59.54	8.2730E+02	35.90	6.2283E-02
2	CD-109	462.60D	No	88.03	1.1530E+03	3.79	8.2222E-01
3	Co-57	271.79D	No	122.06	6.0100E+02	85.51	1.8996E-02
4	CE-139	137.60D	No	165.85	8.5780E+02	80.35	2.8853E-02
5	SN-113	115.10D	No	391.70	1.1560E+03	64.90	4.8141E-02
6	CS-137	30.07Y	Yes	661.66	7.6270E+02	85.12	2.4217E-02
7	Y-88	106.60D	No	898.04	3.0220E+03	93.40	8.7447E-02
8	Y-88	106.60D	Yes	1836.06	3.1560E+03	99.38	8.5829E-02
9	Co-60	5.27Y	Yes	1173.24	1.4150E+03	99.90	3.8282E-02
10	CO-60	5.27Y	No	1332.50	1.4300E+03	99.98	3.8655E-02
11	PB-210	22.30Y	No	46.50	1.2240E+03	4.05	8.1682E-01

Library Title :
Library file name : DKA300:[CANBERRA.GAMMA]CAL.NLB;1
Date printed : 8-JUL-2005 17:13:45.13
Number of nuclides : 10
Number of lines : 17

Nuclide Name	Half-Life	Nuclide Type	Key Line	Energy		Abundance
CO-57	271.74D		*	122.06	keV	85.51 %
				136.47	keV	10.47 %
CO-60	5.27Y			1173.24	keV	99.90 %
			*	1332.50	keV	99.98 %
Y-88	106.63D			898.04	keV	93.40 %
			*	1836.06	keV	99.38 %
CD-109	461.40D		*	88.03	keV	3.79 %
SN-113	115.09D		*	391.70	keV	64.90 %
CS-137	30.00Y		*	661.66	keV	85.12 %
CE-139	137.64D		*	165.85	keV	80.35 %
HG-203	46.60D			70.83	keV	4.75 %
				72.87	keV	8.00 %
				82.60	keV	3.55 %
			*	279.20	keV	77.30 %
PB-210	22.26Y		*	46.50	keV	4.05 %
AM-241	432.20Y		*	59.54	keV	35.90 %

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 - U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

70530-278

100 mL Solid in 100 mL Aluminum Can

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 and Pb-210 were calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in US NRC Regulatory Guide 4.15, Revision 1, February 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776. Density of solid matrix 1.15 g/cc.

Calibration Date: April 1, 2005 12:00 EST

ISOTOPE	GAMMA ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Pb-210	46.5	22.3	y	1224	3.0
Am-241	59.5	432.2	y	827.3	3.0
Cd-109	88	462.6	d	1153	3.3
Co-57	122	271.79	d	601.0	3.0
Ce-139	166	137.6	d	857.8	2.8
Hg-203	279	46.61	d	1856	2.7
Sn-113	392	115.1	d	1156	2.6
Cs-137	662	30.07	y	762.7	3.0
Y-88	898	106.6	d	3022	2.6
Co-60	1173	5.271	y	1415	2.7
Co-60	1332	5.271	y	1430	2.6
Y-88	1836	106.6	d	3156	2.6

P O NUMBER 2832RD, Item 3

SOURCE PREPARED BY: M. Dimitrova

M. Dimitrova, Radiochemist

Q A APPROVED: M. [illegible] 5-12-05

This standard will expire one year after the calibration date.

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(843)556-8171

Gamma Spectrometer Geometry Calibration Package

Detector: GAMMA 16 Geometry: CAN

		YES	NO	Comments
1)	Is all calibration standard information enclosed for:			
	the primary standard certificate?	✓		
	the secondard standard(s) documentation?			N/A
	the nuclide library used?	✓		
	the VMS certificate file?	✓		
2)	Is the detector efficiency curve printout included?		✓	
3)	Is the efficiency calibration report included and reviewed?	✓		
4)	Is the raw count data included for:			
	the calibration peak report?	✓		
	the calibration verification PEAK report?	✓		
	the calibration verification NID report?	✓		
	the last instrument background?	✓		
5)	Are the calibration verification calculations included?	✓		
6)	Are the instrument settings included:			
	amp, HVPS, ADC settings?	✓		

Prepared By: [signature] Date: 4/5/06

Reviewed By: [signature] Date: 4/6/2006

Effective Date: 3/22/06

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 • U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

70530-278

100 mL Solid in 100 mL Aluminum Can

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 and Pb-210 were calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in US NRC Regulatory Guide 4.15, Revision 1, February 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776.
Density of solid matrix 1.15 g/cc.

Calibration Date: April 1, 2005 12:00 EST

ISOTOPE	GAMMA ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Pb-210	46.5	22.3	y	1224	3.0
Am-241	59.5	432.2	y	827.3	3.0
Cd-109	88	462.6	d	1153	3.3
Co-57	122	271.79	d	601.0	3.0
Ce-139	166	137.6	d	857.8	2.8
Hg-203	279	46.61	d	1856	2.7
Sn-113	392	115.1	d	1156	2.6
Cs-137	662	30.07	y	762.7	3.0
Y-88	898	106.6	d	3022	2.6
Co-60	1173	5.271	y	1415	2.7
Co-60	1332	5.271	y	1430	2.6
Y-88	1836	106.6	d	3156	2.6

P O NUMBER 2832RD, Item 3

SOURCE PREPARED BY: M. Dimitrova

M. Dimitrova, Radiochemist

Q A APPROVED: M. [illegible] 5-12-05

This standard will expire one year after the calibration date.

Library Title :
Library file name : DKA300:[CANBERRA.GAMMA]CAL.NLB;1
Date printed : 8-JUL-2005 17:13:45.13
Number of nuclides : 10
Number of lines : 17

Nuclide Name	Half-Life	Nuclide Type	Key Line	Energy		Abundance
CO-57	271.74D		*	122.06	keV	85.51 %
				136.47	keV	10.47 %
CO-60	5.27Y			1173.24	keV	99.90 %
			*	1332.50	keV	99.98 %
Y-88	106.63D			898.04	keV	93.40 %
			*	1836.06	keV	99.38 %
CD-109	461.40D		*	88.03	keV	3.79 %
SN-113	115.09D		*	391.70	keV	64.90 %
CS-137	30.00Y		*	661.66	keV	85.12 %
CE-139	137.64D		*	165.85	keV	80.35 %
HG-203	46.60D			70.83	keV	4.75 %
				72.87	keV	8.00 %
				82.60	keV	3.55 %
			*	279.20	keV	77.30 %
PB-210	22.26Y		*	46.50	keV	4.05 %
AM-241	432.20Y		*	59.54	keV	35.90 %

Print Time : 14-JUN-2005 17:43:24.41
Certificate file name : DKA300:[CANBERRA.GAMMA]70530-278.CER;1
Certificate title : CAN
Certificate date : 1-APR-2005 12:00:00.00
Certificate quantity : 1.00000E+00

Rcd	Nuclide	Halflife	CAL/ INIT	Energy	Rate	%Abun	Activity (uCi)
1	AM-241	432.20Y	Yes	59.54	8.2730E+02	35.90	6.2283E-02
2	CD-109	462.60D	No	88.03	1.1530E+03	3.79	8.2222E-01
3	Co-57	271.79D	No	122.06	6.0100E+02	85.51	1.8996E-02
4	CE-139	137.60D	No	165.85	8.5780E+02	80.35	2.8853E-02
5	SN-113	115.10D	No	391.70	1.1560E+03	64.90	4.8141E-02
6	CS-137	30.07Y	Yes	661.66	7.6270E+02	85.12	2.4217E-02
7	Y-88	106.60D	No	898.04	3.0220E+03	93.40	8.7447E-02
8	Y-88	106.60D	Yes	1836.06	3.1560E+03	99.38	8.5829E-02
9	Co-60	5.27Y	Yes	1173.24	1.4150E+03	99.90	3.8282E-02
10	CO-60	5.27Y	No	1332.50	1.4300E+03	99.98	3.8655E-02
11	PB-210	22.30Y	No	46.50	1.2240E+03	4.05	8.1682E-01

VMS Calibration Report V1.5 Generated 5-APR-2006 19:34:04

Configuration : MCA0:[GAMMA]GAMMA16$1
Analyses by : CALIBRATE V1.7,PEAK V16.4,ENBACK V1.5
Detector Name : GAMMA16 Energy Calib Time: 16-MAR-2006 18:45:26
Efficiency type : Empirical Effncy Calib Time: 5-APR-2006 19:34:04
Detector Geometry: GAMMA16 Shelf :

Energy Calibration Report

Energy = 0.6806 + 0.5005*Channel + -1.4110E-07*(Channel**2)

Nbr	Centroid Channel	True Energy	Computed Energy	Difference
1	91.61	46.50	46.52	-0.024
2	117.43	59.54	59.44	0.092
3	174.63	88.03	88.07	-0.039
4	242.39	122.06	121.98	0.086
5	330.14	165.85	165.88	-0.032
6	781.66	391.70	391.78	-0.077
7	1321.43	661.66	661.75	-0.087
8	1794.10	898.04	898.09	-0.046
9	2344.40	1173.24	1173.17	0.070
10	2662.97	1332.50	1332.37	0.126
11	3671.38	1836.06	1836.13	-0.069

FWHM Calibration Report

FWHM = 0.7322 + 3.5683E-02*(Energy**1/2)

Nbr	Energy	True FWHM	Computed FWHM	Difference
1	46.50	1.10	0.98	0.123
2	59.54	1.11	1.01	0.100
3	88.03	1.11	1.07	0.039
4	122.06	1.05	1.13	-0.077
5	165.85	1.13	1.19	-0.060
6	391.70	1.32	1.44	-0.119
7	661.66	1.54	1.65	-0.108
8	898.04	1.71	1.80	-0.087
9	1173.24	1.90	1.95	-0.056
10	1332.50	2.22	2.03	0.190
11	1836.06	2.32	2.26	0.056

Efficiency Calibration Report

Eff = exp(a2 + a3*x + a4*x**2 + a5*x**3 + a6*x**4 + a7*x**5), x=ln(a1/energy)

a1	a2	a3	a	a5	a6	a7
941.3	-4.125	0.9352	-8.5206E-02	-0.2798	0.2907	-8.1774E-02

Average Deviation = 2.55 % Reduced Chi-Square = 2.12

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff

1	46.50	2.32E-03	8.34E-05	2.39E-03	-0.91	-3.27

Sample ID : CAL_GAMMA16_CAN Acquisition date : 22-MAR-2006 05:47:44

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff
2	59.54	1.42E-02	4.36E-04	1.35E-02	1.76	5.40
3	88.03	4.52E-02	1.50E-03	4.72E-02	-1.33	-4.42
4	122.06	5.92E-02	1.80E-03	6.07E-02	-0.84	-2.55
5	165.85	5.83E-02	1.68E-03	5.66E-02	0.98	2.82
6	391.70	3.26E-02	9.08E-04	3.24E-02	0.22	0.61
7	661.66	2.21E-02	6.69E-04	2.20E-02	0.15	0.46
8	898.04	1.62E-02	4.46E-04	1.69E-02	-1.47	-4.04
9	1173.24	1.34E-02	3.65E-04	1.31E-02	0.72	1.95
10	1332.50	1.19E-02	3.13E-04	1.17E-02	0.61	1.59
11	1836.06	9.61E-03	2.60E-04	9.70E-03	-0.34	-0.93

Approved by: Michael Sutton Approval Date: 4 / 5 / 06

VAX/VMS Nuclide Identification Report Generated 22-MAR-2006 07:49:45.60

```
*********************************************************************
*                          GENERAL ENG. LABS, LLC.                  *
*                              2040 Savage Road                     *
*                            Charleston, SC 29414                   *
*********************************************************************
Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]CAL_GAMMA16_CAN.CNF;1
Sample date       : 1-APR-2005 12:00:00. Acquisition date : 22-MAR-2006 05:47:44
Sample ID         : CAL_GAMMA16_CAN      Sample quantity  : 1.00000E+00 LITER
Detector name     : GAMMA16              Detector geometry: 2L_MB
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:01:11.57  1.0%
Energy tolerance : 2.00000 KEV           Analyst Initials : MJH1
Abundance limit   : 75.00000            Sensitivity      : 3.00000
Batch ID          :                      Detector SN#     : 1922864
Matrix Spike DPM :                       LCS DPM          :
*********************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.36*	19828	35947	1.10	91.28	86	11	2.75E+00	2.0	
2	0	59.46*	84725	44271	1.12	117.45	111	13	1.18E+01	0.6	
3	0	66.70*	372	19791	0.84	131.92	130	6	5.17E-02	59.8	
4	0	88.03	220337	54455	1.12	174.54	168	14	3.06E+01	0.3	
5	0	102.87*	421	14597	0.62	204.21	202	6	5.85E-02	45.7	
6	0	122.06*	103595	32707	1.13	242.56	236	14	1.44E+01	0.5	
7	0	136.46	12668	18212	1.12	271.33	267	10	1.76E+00	2.2	
8	0	165.86	60247	22999	1.14	330.08	323	14	8.37E+00	0.7	
9	0	194.99	314	8684	1.62	388.30	386	6	4.36E-02	47.3	
10	0	198.38*	315	8583	1.71	395.09	393	6	4.37E-02	46.9	
11	0	255.20*	1285	10182	1.17	508.64	506	8	1.78E-01	13.9	
12	0	279.21	2423	10411	1.21	556.65	553	9	3.36E-01	7.9	
13	0	367.79	244	6774	1.39	733.71	731	7	3.38E-02	56.3	
14	0	391.66*	32015	14974	1.31	781.42	774	15	4.45E+00	1.0	
15	0	511.05*	561	6489	3.07	1020.11	1016	9	7.79E-02	26.4	
16	0	661.58*	118936	12322	1.52	1321.09	1312	18	1.65E+01	0.4	
17	0	683.72	197	4393	1.20	1365.37	1362	8	2.73E-02	58.9	
18	0	813.55	402	4936	1.63	1625.00	1622	9	5.58E-02	31.9	
19	0	835.59	98	4442	0.51	1669.10	1667	8	1.36E-02	118.7	
20	0	897.89	35146	11702	1.66	1793.69	1785	18	4.88E+00	0.9	
21	0	940.22	134	3492	0.96	1878.38	1877	5	1.86E-02	66.7	
22	0	1151.03	103	2374	1.62	2300.10	2298	8	1.43E-02	82.7	
23	0	1172.96	120184	6723	1.86	2343.98	2334	20	1.67E+01	0.3	
24	0	1302.66	84	1532	4.86	2603.50	2600	15	1.17E-02	101.5	
25	1	1325.10	598	1599	2.23	2648.41	2638	46	8.31E-02	14.3	5.08E+01
26	1	1332.09*	108135	1401	2.11	2662.41	2638	46	1.50E+01	0.3	
27	0	1459.87*	63	738	2.23	2918.14	2911	10	8.69E-03	82.6	
28	0	1761.02	104	354	4.95	3520.97	3516	14	1.45E-02	39.4	
29	1	1808.14*	86	337	2.47	3615.32	3609	15	1.19E-02	45.6	2.47E+00
30	1	1810.70*	62	181	2.03	3620.45	3609	15	8.59E-03	41.5	
31	0	1835.77	21735	799	2.31	3670.66	3659	25	3.02E+00	0.8	
32	0	1938.46	50	197	3.50	3876.28	3872	11	6.95E-03	56.0	
33	0	1951.96*	27	162	2.53	3903.32	3901	8	3.74E-03	84.2	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated 5-APR-2006 19:34:51.15

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA16_CAN.CNF;1
Sample date : 1-APR-2005 12:00:00. Acquisition date : 22-MAR-2006 08:28:37
Sample ID : VER_GAMMA16_CAN Sample quantity : 1.00000E+00 LITER
Detector name : GAMMA16 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:01:11.69 1.0%
Energy tolerance : 2.00000 KEV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 1922864
Matrix Spike DPM : LCS DPM :

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.39*	19766	29516	1.08	91.34	87	9	2.75E+00	1.7	
2	0	59.49*	84360	43432	1.11	117.51	112	13	1.17E+01	0.6	
3	0	65.64*	283	15476	1.03	129.81	128	5	3.93E-02	65.9	
4	0	67.95*	260	17276	1.20	134.42	133	5	3.61E-02	75.9	
5	0	88.03	218470	50747	1.12	174.55	169	13	3.03E+01	0.3	
6	0	102.37*	175	12102	1.31	203.21	202	5	2.44E-02	94.4	
7	0	122.06*	103554	33091	1.14	242.56	236	14	1.44E+01	0.5	
8	0	136.46	12388	18242	1.10	271.34	267	10	1.72E+00	2.2	
9	0	165.87	59667	21967	1.13	330.11	324	13	8.29E+00	0.7	
10	0	214.63	198	7817	0.63	427.56	426	5	2.75E-02	67.4	
11	0	255.06*	1423	11624	1.32	508.36	504	9	1.98E-01	13.9	
12	0	279.10	2310	10580	1.31	556.42	552	9	3.21E-01	8.3	
13	0	310.72	217	7410	1.41	619.63	617	7	3.02E-02	66.0	
14	0	391.73*	32540	13768	1.31	781.56	776	14	4.52E+00	0.9	
15	0	444.62*	214	5644	1.54	887.30	885	6	2.97E-02	56.0	
16	0	510.88*	630	8712	2.91	1019.78	1014	12	8.76E-02	30.0	
17	0	603.63*	204	3438	1.75	1205.22	1203	6	2.84E-02	46.1	
18	0	610.37*	67	4196	1.33	1218.70	1217	7	9.30E-03	161.2	
19	0	661.65*	119483	12267	1.53	1321.24	1312	18	1.66E+01	0.4	
20	0	772.08	148	3436	0.91	1542.08	1540	7	2.05E-02	66.4	
21	0	814.16	321	4978	1.55	1626.24	1623	9	4.45E-02	40.1	
22	0	897.99	34326	11689	1.72	1793.89	1786	17	4.77E+00	0.9	
23	0	936.84*	85	5672	1.43	1871.60	1870	8	1.18E-02	154.1	
24	0	950.16*	79	5860	1.37	1898.25	1895	8	1.10E-02	167.7	
25	0	958.16*	103	5782	1.36	1914.25	1910	8	1.42E-02	128.9	
26	0	1036.88	70	3495	1.20	2071.72	2069	7	9.72E-03	140.5	
27	0	1110.97*	77	2459	0.89	2219.96	2218	5	1.06E-02	97.8	
28	0	1120.83*	146	2590	1.73	2239.69	2237	7	2.03E-02	58.5	
29	0	1173.10	120543	6551	1.88	2344.26	2334	20	1.67E+01	0.3	
30	6	1325.96	1292	2409	3.60	2650.13	2639	39	1.79E-01	12.6	5.30E+01
31	6	1332.31*	109158	1304	2.17	2662.84	2639	39	1.52E+01	0.3	
32	0	1526.89	66	565	1.79	3052.27	3050	7	9.22E-03	60.5	
33	0	1552.16*	46	587	0.71	3102.86	3099	7	6.34E-03	89.3	
34	0	1687.25	94	368	2.62	3373.30	3370	8	1.30E-02	36.8	
35	0	1706.74	93	576	3.57	3412.30	3406	14	1.29E-02	55.8	
36	0	1765.06*	28	136	0.98	3529.08	3527	5	3.95E-03	65.5	
37	0	1771.14*	59	283	2.41	3541.25	3536	10	8.24E-03	55.0	
38	0	1792.79*	20	196	1.32	3584.59	3581	7	2.72E-03	121.2	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1835.99	21386	851	2.27	3671.08	3661	22	2.97E+00	0.8	
40	4	1992.72*	46	117	1.91	3984.95	3981	15	6.37E-03	41.7	2.31E+00
41	4	1996.33	54	122	2.28	3992.16	3981	15	7.55E-03	38.2	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*********************************************************************
*                          General Eng. Labs, LLC.                  *
*                              2040 Savage Road                     *
*                            Charleston, SC 29414                   *
*********************************************************************
*                                                                   *
*                             DETECTOR DATA                         *
*                                                                   *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA16_  *
* Acquisition date : 22-MAR-2006 08:28:37 Detector SN#    : 1922864  *
* Detector ID      : GAMMA16              Sensitivity     : 3.000    *
* Geometry         : CAN                  Energy tolerance: 2.000    *
* Elapsed live time:    0 02:00:00.00     Abundance limit : 75.000   *
* Elapsed real time:    0 02:01:11.69     Half life ratio :  8.000   *
*********************************************************************
*                                                                   *
*                             SAMPLE DATA                           *
*                                                                   *
* Sample date      :  1-APR-2005 12:00:00 Nuclide Library :          *
* Sample ID        : VER_GAMMA16_CAN      Analyst initials: MJH1     *
* Batch Number     :                      Sample Quantity : 1.0000E+00 LITER  *
* Recovery         :    1.00000           Carrier Weight :    0.00000  *
*********************************************************************
*                                                                   *
*                              QC DATA                              *
* Standard Weight  :   0.00000                                      *
* CALIB. DATE/TIME :  5-APR-2006 19:34:04 MS Isotope      :         *
* MSD DPM          :    0.000             MSD Isotope     :         *
* LCS DPM          :    0.000             LCS Isotope     :         *
* LCSD DPM         :    0.000             LCSD Isotope    :         *
*********************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	
CO-57	1.852E+04	1.448E+03	9.493E+01	0.000E+00
CO-60	3.965E+04	2.480E+03	5.609E+01	0.000E+00
Y-88	8.368E+04	4.934E+03	3.796E+02	0.000E+00
CD-109	7.820E+05	9.456E+04	2.400E+03	0.000E+00
SN-113	4.927E+04	3.209E+03	5.930E+02	0.000E+00
CS-137	2.444E+04	1.517E+03	6.997E+01	0.000E+00
CE-139	2.941E+04	2.472E+03	2.269E+02	0.000E+00
HG-203	5.395E+04	1.002E+04	9.723E+03	0.000E+00
PB-210	8.052E+05	8.949E+04	2.365E+04	0.000E+00
AM-241	6.584E+04	8.964E+03	4.690E+02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/LITER)	K.L.	Act error Ided	MDA (pCi/LITER)

VAX/VMS Nuclide Identification Report Generated 5-APR-2006 19:34:53.04

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA16_CAN.CNF;1
Sample date      : 1-APR-2005 12:00:00. Acquisition date : 22-MAR-2006 08:28:37
Sample ID        : VER_GAMMA16_CAN      Sample quantity  : 1.00000E+00 LITER
Detector name    : GAMMA16              Detector geometry: CAN
Elapsed live time: 0 02:00:00.00        Elapsed real time: 0 02:01:11.69  1.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         :                      Detector SN#     : 1922864
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/LITER	Decay Corr pCi/LITER	2-Sigma %Error
CO-57	122.06	103554	85.51*	6.068E+00	7.492E+03	1.852E+04	7.82
	136.47	12388	10.47	6.049E+00	7.343E+03	1.816E+04	9.60
CO-60	1173.24	120543	99.90	1.314E+00	3.446E+04	3.916E+04	6.86
	1332.50	109158	99.98*	1.175E+00	3.489E+04	3.965E+04	6.26
Y-88	898.04	34326	93.40	1.688E+00	8.173E+03	8.209E+04	9.61
	1836.06	21386	99.38*	9.696E-01	8.331E+03	8.368E+04	5.90
CD-109	88.03	218470	3.79*	4.716E+00	4.589E+05	7.820E+05	12.09
SN-113	391.70	32540	64.90*	3.238E+00	5.812E+03	4.927E+04	6.51
CS-137	661.66	119483	85.12*	2.205E+00	2.390E+04	2.444E+04	6.21
CE-139	165.85	59667	80.35*	5.662E+00	4.923E+03	2.941E+04	8.41
HG-203	70.83	------	4.75	2.802E+00	------ Line Not Found		------
	72.87	------	8.00	3.066E+00	------ Line Not Found		------
	82.60	------	3.55	4.202E+00	------ Line Not Found		------
	279.20	2310	77.30*	4.079E+00	2.751E+02	5.395E+04	18.58
PB-210	46.50	19766	4.05*	2.345E-01	7.812E+05	8.052E+05	11.11
AM-241	59.54	84360	35.90*	1.342E+00	6.574E+04	6.584E+04	13.61

Flag: "*" = Keyline

Sample ID : VER_GAMMA16_CAN Acquisition date : 22-MAR-2006 08:28:37

Total number of lines in spectrum	41	
Number of unidentified lines	28	
Number of lines tentatively identified by NID	13	31.71%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/LITER	Decay Corr pCi/LITER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	2.47	7.492E+03	1.852E+04	0.145E+04	7.82	
CO-60	5.27Y	1.14	3.489E+04	3.965E+04	0.248E+04	6.26	
Y-88	106.63D	10.0	8.331E+03	8.368E+04	0.493E+04	5.90	
CD-109	461.40D	1.70	4.589E+05	7.820E+05	0.946E+05	12.09	
SN-113	115.09D	8.48	5.812E+03	4.927E+04	0.321E+04	6.51	
CS-137	30.00Y	1.02	2.390E+04	2.444E+04	0.152E+04	6.21	
CE-139	137.64D	5.97	4.923E+03	2.941E+04	0.247E+04	8.41	
HG-203	46.60D	196.	2.751E+02	5.395E+04	1.002E+04	18.58	
PB-210	22.26Y	1.03	7.812E+05	8.052E+05	0.895E+05	11.11	
AM-241	432.20Y	1.00	6.574E+04	6.584E+04	0.896E+04	13.61	
			---------	---------			
	Total Activity :		1.391E+06	1.952E+06			
	Grand Total Activity :		1.391E+06	1.952E+06			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Sample ID : VER_GAMMA16_CAN Acquisition date : 22-MAR-2006 08:28:37

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	65.64	283	15476	1.03	129.81	128	5	3.93E-02	****	2.12E+00	
0	67.95	260	17276	1.20	134.42	133	5	3.61E-02	****	2.42E+00	
0	102.37	175	12102	1.31	203.21	202	5	2.44E-02	****	5.63E+00	
0	214.63	198	7817	0.63	427.56	426	5	2.75E-02	****	4.87E+00	
0	255.06	1423	11624	1.32	508.36	504	9	1.98E-01	27.9	4.34E+00	
0	310.72	217	7410	1.41	619.63	617	7	3.02E-02	****	3.79E+00	
0	444.62	214	5644	1.54	887.30	885	6	2.97E-02	****	2.97E+00	
0	510.88	630	8712	2.91	1019.78	1014	12	8.76E-02	60.0	2.69E+00	
0	603.63	204	3438	1.75	1205.22	1203	6	2.84E-02	92.2	2.37E+00	
0	610.37	67	4196	1.33	1218.70	1217	7	9.30E-03	****	2.35E+00	
0	772.08	148	3436	0.91	1542.08	1540	7	2.05E-02	****	1.93E+00	
0	814.16	321	4978	1.55	1626.24	1623	9	4.45E-02	80.2	1.85E+00	
0	936.84	85	5672	1.43	1871.60	1870	8	1.18E-02	****	1.62E+00	
0	950.16	79	5860	1.37	1898.25	1895	8	1.10E-02	****	1.60E+00	
0	958.16	103	5782	1.36	1914.25	1910	8	1.42E-02	****	1.59E+00	
0	1036.88	70	3495	1.20	2071.72	2069	7	9.72E-03	****	1.48E+00	
0	1110.97	77	2459	0.89	2219.96	2218	5	1.06E-02	****	1.38E+00	
0	1120.83	146	2590	1.73	2239.69	2237	7	2.03E-02	****	1.37E+00	
6	1325.96	1292	2409	3.60	2650.13	2639	39	1.79E-01	25.2	1.18E+00	
0	1526.89	66	565	1.79	3052.27	3050	7	9.22E-03	****	1.06E+00	
0	1552.16	46	587	0.71	3102.86	3099	7	6.34E-03	****	1.05E+00	
0	1687.25	94	368	2.62	3373.30	3370	8	1.30E-02	73.7	1.00E+00	
0	1706.74	93	576	3.57	3412.30	3406	14	1.29E-02	****	9.95E-01	
0	1765.06	28	136	0.98	3529.08	3527	5	3.95E-03	****	9.81E-01	
0	1771.14	59	283	2.41	3541.25	3536	10	8.24E-03	****	9.80E-01	
0	1792.79	20	196	1.32	3584.59	3581	7	2.72E-03	****	9.76E-01	
4	1992.72	46	117	1.91	3984.95	3981	15	6.37E-03	83.4	9.61E-01	
4	1996.33	54	122	2.28	3992.16	3981	15	7.55E-03	76.3	9.61E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 5-APR-2006 19:34:54.94

```
*********************************************************************
*                          GENERAL ENG. LABS, LLC.                  *
*                              2040 Savage Road                     *
*                            Charleston, SC 29414                   *
*********************************************************************
*                                                                   *
*                            DETECTOR DATA                          *
*                                                                   *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA16_CAN.CNF;1*
* Acquisition date : 22-MAR-2006 08:28:37  Detector SN#     : 1922864      *
* Detector ID      : GAMMA16               Sensitivity      : 3.00000      *
* Geometry         : CAN                   Energy tolerance: 2.00000      *
* Elapsed live time: 0 02:00:00.00         Abundance limit  : 75.00000     *
* Elapsed real time: 0 02:01:11.69         Half life ratio  : 8.00000      *
*********************************************************************
*                                                                   *
*                            SAMPLE DATA                            *
*                                                                   *
* Sample date      : 1-APR-2005 12:00:00.  Nuclide Library : CAL           *
* Sample ID        : VER_GAMMA16_CAN       Analyst initials: MJH1          *
* Batch Number     :                       Sample Quantity : 1.00000E+00 LITER *
*********************************************************************
*                                                                   *
*                              QC DATA                              *
*                                                                   *
* CALIB. DATE/TIME : 5-APR-2006 19:34:04.74MS Isotope      :        *
* MSD DPM          :                       MSD Isotope     :        *
* LCS DPM          :                       LCS Isotope     :        *
*********************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	MDA error	Act/MDA
CO-57	1.852E+04	1.448E+03	9.493E+01	7.365E+00	195.142
CO-60	3.965E+04	2.480E+03	5.609E+01	3.491E+00	706.876
Y-88	8.368E+04	4.934E+03	3.796E+02	2.161E+01	220.425
CD-109	7.820E+05	9.456E+04	2.400E+03	2.899E+02	325.827
SN-113	4.927E+04	3.209E+03	5.930E+02	3.696E+01	83.094
CS-137	2.444E+04	1.517E+03	6.997E+01	4.313E+00	349.331
CE-139	2.941E+04	2.472E+03	2.269E+02	1.884E+01	129.598
HG-203	5.395E+04	1.002E+04	9.723E+03	8.132E+02	5.549
PB-210	8.052E+05	8.949E+04	2.365E+04	2.456E+03	34.049
AM-241	6.584E+04	8.964E+03	4.690E+02	6.351E+01	140.401

VMS Quality Assurance Report V1.3 Generated 21-MAR-2006 07:39:49

QA filename : DKA300:[CANBERRA.GAMMA]QC_BKG_GAMMA16.QAF;1

Sample ID : BKG_GAMMA16 Sample quantity : 1.80 LITER
Sample date : 20-MAR-2006 00:00:00 Acquisition date : 20-MAR-2006 14:59:24
Elapsed live time: 0 16:40:00.00 Elapsed real time: 0 16:40:04.08

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
BACKGROUND (GROSS COUNTS)	7.54E+04	9.49E+04	8.50E+04	
BACKGROUND (CPS)	1.26	1.58	1.42	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____ Approval Date: 3 / 21 / 06

Gamma Spectroscopy Calibration Verification

Instrument: Gamma 12 Calibration Date: 3/22/2006

Geometry: CAN Standard Id: 70530-278

Isotope		CALIBRATED ACTIVITY (PCI)	MEASURED ACTIVITY (PCI)	DIFFERENCE %
Pb-210		8.1682E+05	8.052E+05	-1.42
Am-241		6.2283E+04	6.584E+04	5.71
Cd-109		8.2222E+05	7.820E+05	-4.89
Co-57		1.8996E+04	1.852E+04	-2.51
Ce-139		2.8853E+04	2.941E+04	1.93
Sn-113		4.8141E+04	4.927E+04	2.35
Cs-137		2.4217E+04	2.444E+04	0.92
Co-60	1332.5	3.8655E+04	3.965E+04	2.57
Y-88	1836.06	8.5829E+04	8.368E+04	-2.50

Prepared By: [signature] Date: 4/6/06

Reviewed By: [signature] Date: 4/6/2006

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(843)556-8171

Gamma Spectrometer Front End Electronics Setup

Detector: GAMMA 16

Date Performed: 3/16/06 Performed By: [signature]

High Voltage Power Supply	***Spectroscopy Amplifier***
Model No. 3106D High Voltage 4.0 KV	Model No. 2020 Course Gain 10 Fine Gain 1.238 Time Constant 4 µsec Input polarity + BSLR rate AUTO BSLR mode ASYM Threshold AUTO
ADC Model No. 8701 Gain 4K	
AIM Module Model No. ND556 Address NISA3:1	

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(843)556-8171

Gamma Spectrometer Geometry Calibration Package

Detector: Gamma 17 Geometry: CAN

		YES	NO	Comments
1)	Is all calibration standard information enclosed for:			
	the primary standard certificate?	✓		
	the secondard standard(s) documentation?			N/A
	the nuclide library used?	✓		
	the VMS certificate file?	✓		
2)	Is the detector efficiency curve printout included?		✓	
3)	Is the efficiency calibration report included and reviewed?	✓		
4)	Is the raw count data included for:			
	the calibration peak report?	✓		
	the calibration verification PEAK report?	✓		
	the calibration verification NID report?	✓		
	the last instrument background?	✓		
5)	Are the calibration verification calculations included?	✓		
6)	Are the instrument settings included:			
	amp, HVPS, ADC settings?	✓		

Prepared By: [signature] Date: 1/4/06

Reviewed By: [signature] Date: 1/4/2006

Effective Date: 1/4/06

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(803)556-8171

Gamma Spectrometer Front End Electronics Setup

Detector: Gamma 17

Date Performed: 12/21/05 Performed By: Jay Hanely

High Voltage Power Supply Model No. 3106D High Voltage 2.5 KV	***Spectroscopy Amplifier*** Model No. 2026 Course Gain 50 Fine Gain .734 Time Constant 6 u Seconds Input polarity negative BSLR rate N/A BSLR mode N/A Threshold N/A
ADC Model No. 8701 Gain 4000	
AIM Module Model No. 556A Address N1E07:2	

Gamma Spectroscopy Calibration Verification

Instrument: GAMMA 17 Calibration Date: 1/4/2006

Geometry: CAN Standard Id: 70530-278

Isotope		CALIBRATED ACTIVITY (PCI)	MEASURED ACTIVITY (PCI)	DIFFERENCE %
Pb-210		8.1682E+05	8.378E+05	2.57
Am-241		6.2283E+04	6.129E+04	-1.59
Cd-109		8.2222E+05	8.300E+05	0.95
Co-57		1.8996E+04	1.993E+04	4.92
Ce-139		2.8853E+04	2.823E+04	-2.16
Sn-113		4.8141E+04	4.902E+04	1.83
Cs-137		2.4217E+04	2.504E+04	3.40
Co-60	1332.5	3.8655E+04	3.841E+04	-0.63
Y-88	1836.06	8.5829E+04	8.665E+04	0.96

Prepared By: [signature] Date: 1/4/06

Reviewed By: [signature] Date: 1/4/2006

VMS Quality Assurance Report V1.3 Generated 1-JAN-2006 15:41:29

QA filename : DKA300:[CANBERRA.GAMMA]QC_BKG_GAMMA17.QAF;2

Sample ID : BKG_GAMMA17 Sample quantity : 1.80 LITER
Sample date : 31-DEC-2005 00:00:00 Acquisition date : 31-DEC-2005 22:53:29
Elapsed live time: 0 16:40:00.00 Elapsed real time: 0 16:40:04.27

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
BACKGROUND (GROSS COUNTS)	1.02E+05	1.09E+05	1.06E+05	
BACKGROUND (CPS)	1.70	1.81	1.76	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: ~M9H Approval Date: 1 / 3 / 06

VAX/VMS Nuclide Identification Report Generated 4-JAN-2006 12:21:23.81

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA17_CAN.CNF;2
Sample date : 1-APR-2005 00:00:00. Acquisition date : 4-JAN-2006 11:19:57.
Sample ID : VER_GAMMA17_CAN Sample quantity : 1.00000E+00 LITER
Detector name : GAMMA17 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:57.34 1.6%
Energy tolerance : 2.00000 KEV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 30-TN10348
Matrix Spike DPM : LCS DPM :

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	10	37.25	17611	33593	2.63	62.29	58	27	4.89E+00	2.0	1.05E+03
2	10	40.36	29258	65003	2.41	68.52	58	27	8.13E+00	2.2	
3	10	42.95	34288	67040	2.43	73.74	58	27	9.52E+00	2.1	
4	10	46.49*	290008	39687	1.27	80.85	58	27	8.06E+01	0.2	
5	0	49.75*	2288	34245	0.88	87.39	86	6	6.36E-01	13.0	
6	0	59.51	202543	48521	1.09	106.99	101	12	5.63E+01	0.3	
7	7	67.08*	3151	21644	2.08	122.19	119	18	8.75E-01	8.0	6.81E+00
8	7	69.09	1634	27973	1.43	126.22	119	18	4.54E-01	18.9	
9	7	71.02*	1353	31218	1.60	130.10	119	18	3.76E-01	24.9	
10	0	88.03*	191631	36125	1.13	164.27	157	14	5.32E+01	0.3	
11	0	122.08	71359	17173	1.16	232.63	226	14	1.98E+01	0.5	
12	0	136.51	8412	9619	1.17	261.62	257	10	2.34E+00	2.4	
13	0	165.89	40990	9793	1.19	320.62	315	12	1.14E+01	0.7	
14	0	199.01*	1672	6980	1.30	387.13	383	9	4.65E-01	9.3	
15	0	203.72	341	5284	1.15	396.60	394	7	9.47E-02	35.7	
16	0	255.01	915	5666	1.22	499.61	496	9	2.54E-01	15.2	
17	0	279.21	3249	6153	1.26	548.22	543	11	9.03E-01	5.0	
18	0	310.41	195	3552	1.23	610.87	608	7	5.41E-02	51.2	
19	0	391.74	22106	6155	1.34	774.23	768	14	6.14E+00	1.0	
20	0	511.16*	178	3311	0.78	1014.10	1011	9	4.96E-02	58.9	
21	0	646.19	81	1439	1.07	1285.35	1283	5	2.26E-02	70.9	
22	0	661.69*	47501	5390	1.57	1316.48	1308	17	1.32E+01	0.6	
23	0	692.40	220	2302	1.96	1378.17	1375	8	6.10E-02	38.5	
24	0	814.42	264	2408	1.65	1623.30	1619	9	7.34E-02	34.1	
25	0	849.90	135	1751	1.54	1694.58	1692	7	3.76E-02	51.9	
26	0	898.06	22519	4317	1.75	1791.34	1784	14	6.26E+00	0.9	
27	0	1005.27	46	2365	1.39	2006.75	2005	9	1.28E-02	191.2	
28	0	1017.54	129	1636	1.22	2031.41	2029	7	3.60E-02	52.4	
29	0	1173.23	46906	2622	1.94	2344.25	2334	19	1.30E+01	0.5	
30	4	1325.25	510	853	2.94	2649.74	2642	32	1.42E-01	14.5	8.41E+00
31	4	1332.50	42088	745	2.06	2664.31	2642	32	1.17E+01	0.5	
32	0	1446.16	79	353	2.79	2892.73	2888	9	2.19E-02	44.6	
33	0	1530.67*	173	785	7.24	3062.58	3055	17	4.80E-02	38.0	
34	0	1836.11*	12954	402	2.31	3676.52	3665	22	3.60E+00	1.0	
35	0	2038.61	12	90	1.25	4083.61	4079	11	3.42E-03	152.3	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA17_ *
* Acquisition date :  4-JAN-2006 11:19:57 Detector SN#     : 30-TN10348 *
* Detector ID       : GAMMA17             Sensitivity      : 3.000      *
* Geometry          : CAN                 Energy tolerance: 2.000      *
* Elapsed live time:    0 01:00:00.00     Abundance limit  : 75.000     *
* Elapsed real time:    0 01:00:57.34     Half life ratio  :  8.000     *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date       :  1-APR-2005 00:00:00 Nuclide Library :            *
* Sample ID         : VER_GAMMA17_CAN      Analyst initials: MJH1       *
* Batch Number      :                      Sample Quantity : 1.0000E+00 LITER *
* Recovery          :    1.00000           Carrier Weight :    0.00000  *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
* Standard Weight   :   0.00000                                         *
* CALIB. DATE/TIME :  4-JAN-2006 11:17:00 MS Isotope      :            *
* MSD DPM           :    0.000            MSD Isotope     :            *
* LCS DPM           :    0.000            LCS Isotope     :            *
* LCSD DPM          :    0.000            LCSD Isotope    :            *
*************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	
CO-57	1.993E+04	2.260E+03	1.110E+02	0.000E+00
CO-60	3.841E+04	2.074E+03	1.059E+02	0.000E+00
Y-88	8.665E+04	5.115E+03	4.469E+02	0.000E+00
CD-109	8.300E+05	7.448E+04	2.419E+03	0.000E+00
SN-113	4.902E+04	3.222E+03	5.936E+02	0.000E+00
CS-137	2.504E+04	2.298E+03	1.281E+02	0.000E+00
CE-139	2.823E+04	2.270E+03	2.319E+02	0.000E+00
HG-203	5.261E+04	6.807E+03	4.714E+03	0.000E+00
PB-210	8.378E+05	6.353E+04	2.306E+03	0.000E+00
AM-241	6.129E+04	4.615E+03	2.084E+02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/LITER)	K.L. Act error Ided	MDA (pCi/LITER)

VAX/VMS Nuclide Identification Report Generated 4-JAN-2006 12:21:25.01

```
*********************************************************************
*                          GENERAL ENG. LABS, LLC.                  *
*                              2040 Savage Road                     *
*                            Charleston, SC 29414                   *
*********************************************************************
Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA17_CAN.CNF;2
Sample date       : 1-APR-2005 00:00:00. Acquisition date : 4-JAN-2006 11:19:57.
Sample ID         : VER_GAMMA17_CAN      Sample quantity  : 1.00000E+00 LITER
Detector name     : GAMMA17              Detector geometry: CAN
Elapsed live time: 0 01:00:00.00         Elapsed real time: 0 01:00:57.34  1.6%
Energy tolerance  : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit   : 75.00000             Sensitivity      : 3.00000
Batch ID          :                      Detector SN#     : 30-TN10348
Matrix Spike DPM  :                      LCS DPM          :
*********************************************************************
```

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/LITER	Decay Corr pCi/LITER	2-Sigma %Error
CO-57	122.06	71359	85.51*	6.397E+00	9.794E+03	1.993E+04	11.34
	136.47	8412	10.47	6.106E+00	9.878E+03	2.010E+04	11.89
CO-60	1173.24	46906	99.90	1.015E+00	3.472E+04	3.838E+04	5.64
	1332.50	42088	99.98*	9.097E-01	3.474E+04	3.841E+04	5.40
Y-88	898.04	22519	93.40	1.285E+00	1.408E+04	8.607E+04	6.78
	1836.06	12954	99.38*	6.903E-01	1.418E+04	8.665E+04	5.90
CD-109	88.03	191631	3.79*	6.949E+00	5.463E+05	8.300E+05	8.97
SN-113	391.70	22106	64.90*	2.792E+00	9.161E+03	4.902E+04	6.57
CS-137	661.66	47501	85.12*	1.703E+00	2.461E+04	2.504E+04	9.18
CE-139	165.85	40990	80.35*	5.515E+00	6.944E+03	2.823E+04	8.04
HG-203	70.83	1353	4.75	7.025E+00	3.043E+03	1.916E+05	51.27
	72.87	1353	8.00	7.025E+00	1.807E+03	1.138E+05	51.17
	82.60	------	3.55	6.996E+00	------ Line Not Found		------
	279.20	3249	77.30*	3.776E+00	8.357E+02	5.261E+04	12.94
PB-210	46.50	290008	4.05*	6.571E+00	8.181E+05	8.378E+05	7.58
AM-241	59.54	202543	35.90*	6.919E+00	6.121E+04	6.129E+04	7.53

Flag: "*" = Keyline

Sample ID : VER_GAMMA17_CAN Acquisition date : 4-JAN-2006 11:19:57

Total number of lines in spectrum	35	
Number of unidentified lines	21	
Number of lines tentatively identified by NID	14	40.00%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/LITER	Decay Corr pCi/LITER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	2.03	9.794E+03	1.993E+04	0.226E+04	11.34	
CO-60	5.27Y	1.11	3.474E+04	3.841E+04	0.207E+04	5.40	
Y-88	106.63D	6.11	1.418E+04	8.665E+04	0.511E+04	5.90	
CD-109	461.40D	1.52	5.463E+05	8.300E+05	0.745E+05	8.97	
SN-113	115.09D	5.35	9.161E+03	4.902E+04	0.322E+04	6.57	
CS-137	30.00Y	1.02	2.461E+04	2.504E+04	0.230E+04	9.18	
CE-139	137.64D	4.07	6.944E+03	2.823E+04	0.227E+04	8.04	
HG-203	46.60D	63.0	8.357E+02	5.261E+04	0.681E+04	12.94	
PB-210	22.26Y	1.02	8.181E+05	8.378E+05	0.635E+05	7.58	
AM-241	432.20Y	1.00	6.121E+04	6.129E+04	0.462E+04	7.53	
			---------	---------			
	Total Activity :		1.526E+06	2.029E+06			
	Grand Total Activity :		1.526E+06	2.029E+06			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Sample ID : VER_GAMMA17_CAN Acquisition date : 4-JAN-2006 11:19:57

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
10	37.25	17611	33593	2.63	62.29	58	27	4.89E+00	4.0	6.15E+00	
10	40.36	29258	65003	2.41	68.52	58	27	8.13E+00	4.3	6.31E+00	
10	42.95	34288	67040	2.43	73.74	58	27	9.52E+00	4.1	6.43E+00	
0	49.75	2288	34245	0.88	87.39	86	6	6.36E-01	25.9	6.68E+00	
7	67.08	3151	21644	2.08	122.19	119	18	8.75E-01	16.0	7.01E+00	
7	69.09	1634	27973	1.43	126.22	119	18	4.54E-01	37.9	7.02E+00	
0	199.01	1672	6980	1.30	387.13	383	9	4.65E-01	18.7	4.91E+00	
0	203.72	341	5284	1.15	396.60	394	7	9.47E-02	71.5	4.83E+00	
0	255.01	915	5666	1.22	499.61	496	9	2.54E-01	30.4	4.07E+00	
0	310.41	195	3552	1.23	610.87	608	7	5.41E-02	****	3.45E+00	
0	511.16	178	3311	0.78	1014.10	1011	9	4.96E-02	****	2.17E+00	
0	646.19	81	1439	1.07	1285.35	1283	5	2.26E-02	****	1.74E+00	
0	692.40	220	2302	1.96	1378.17	1375	8	6.10E-02	76.9	1.63E+00	
0	814.42	264	2408	1.65	1623.30	1619	9	7.34E-02	68.2	1.40E+00	
0	849.90	135	1751	1.54	1694.58	1692	7	3.76E-02	****	1.35E+00	
0	1005.27	46	2365	1.39	2006.75	2005	9	1.28E-02	****	1.16E+00	
0	1017.54	129	1636	1.22	2031.41	2029	7	3.60E-02	****	1.15E+00	
4	1325.25	510	853	2.94	2649.74	2642	32	1.42E-01	28.9	9.14E-01	
0	1446.16	79	353	2.79	2892.73	2888	9	2.19E-02	89.2	8.48E-01	
0	1530.67	173	785	7.24	3062.58	3055	17	4.80E-02	75.9	8.08E-01	
0	2038.61	12	90	1.25	4083.61	4079	11	3.42E-03	****	6.29E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 4-JAN-2006 12:21:26.33

```
**********************************************************************
*                          GENERAL ENG. LABS, LLC.                   *
*                              2040 Savage Road                      *
*                            Charleston, SC 29414                    *
**********************************************************************
*                                                                    *
*                            DETECTOR DATA                           *
*                                                                    *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA17_CAN.CNF;2*
* Acquisition date : 4-JAN-2006 11:19:57.  Detector SN#    : 30-TN10348      *
* Detector ID      : GAMMA17               Sensitivity     : 3.00000         *
* Geometry         : CAN                   Energy tolerance: 2.00000         *
* Elapsed live time: 0 01:00:00.00         Abundance limit : 75.00000        *
* Elapsed real time: 0 01:00:57.34         Half life ratio : 8.00000         *
**********************************************************************
*                                                                    *
*                            SAMPLE DATA                             *
*                                                                    *
* Sample date      : 1-APR-2005 00:00:00.  Nuclide Library : CAL             *
* Sample ID        : VER_GAMMA17_CAN       Analyst initials: MJH1            *
* Batch Number     :                       Sample Quantity : 1.00000E+00 LITER *
**********************************************************************
*                                                                    *
*                              QC DATA                               *
*                                                                    *
* CALIB. DATE/TIME : 4-JAN-2006 11:17:00.18MS Isotope      :         *
* MSD DPM          :                       MSD Isotope     :         *
* LCS DPM          :                       LCS Isotope     :         *
**********************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	MDA error	Act/MDA
CO-57	1.993E+04	2.260E+03	1.110E+02	1.254E+01	179.460
CO-60	3.841E+04	2.074E+03	1.059E+02	5.618E+00	362.744
Y-88	8.665E+04	5.115E+03	4.469E+02	2.493E+01	193.900
CD-109	8.300E+05	7.448E+04	2.419E+03	2.165E+02	343.193
SN-113	4.902E+04	3.222E+03	5.936E+02	3.713E+01	82.582
CS-137	2.504E+04	2.298E+03	1.281E+02	1.166E+01	195.481
CE-139	2.823E+04	2.270E+03	2.319E+02	1.837E+01	121.751
HG-203	5.261E+04	6.807E+03	4.714E+03	3.879E+02	11.161
PB-210	8.378E+05	6.353E+04	2.306E+03	1.746E+02	363.239
AM-241	6.129E+04	4.615E+03	2.084E+02	1.564E+01	294.132

VMS Calibration Report V1.5 Generated 4-JAN-2006 11:17:00

Configuration : MCA0:[GAMMA]GAMMA17$1
Analyses by : CALIBRATE V1.7,PEAK V16.4
Detector Name : GAMMA17 Energy Calib Time: 4-JAN-2006 11:17:00
Efficiency type : Empirical Effncy Calib Time: 4-JAN-2006 11:17:00
Detector Geometry: GAMMA17 Shelf :

Energy Calibration Report

Energy = 6.233 + 0.4980*Channel + -7.0017E-08*(Channel**2)

Nbr	Centroid Channel	True Energy	Computed Energy	Difference
1	80.83	46.50	46.48	0.016
2	106.97	59.54	59.50	0.036
3	164.29	88.03	88.04	-0.008
4	232.63	122.06	122.08	-0.014
5	320.58	165.85	165.87	-0.013
6	774.21	391.70	391.73	-0.028
7	1316.46	661.66	661.68	-0.020
8	1791.27	898.04	898.02	0.019
9	2344.23	1173.24	1173.22	0.017
10	2664.29	1332.50	1332.49	0.006
11	3676.44	1836.06	1836.07	-0.011

FWHM Calibration Report

FWHM = 0.8169 + 3.2641E-02*(Energy**1/2)

Nbr	Energy	True FWHM	Computed FWHM	Difference
1	46.50	1.23	1.04	0.191
2	59.54	1.09	1.07	0.018
3	88.03	1.09	1.12	-0.038
4	122.06	1.16	1.18	-0.017
5	165.85	1.20	1.24	-0.034
6	391.70	1.36	1.46	-0.102
7	661.66	1.58	1.66	-0.081
8	898.04	1.72	1.80	-0.079
9	1173.24	1.92	1.93	-0.019
10	1332.50	2.04	2.01	0.034
11	1836.06	2.34	2.22	0.126

Efficiency Calibration Report

Eff = exp(a2 + a3*x + a4*x**2 + a5*x**3 + a6*x**4 + a7*x**5), x=ln(a1/energy)

a1	a2	a3	a4	a5	a6	a7
941.3	-4.396	0.8942	6.8094E-02	7.1991E-03	-4.6729E-02	8.1119E-03

Average Deviation = 1.56 % Reduced Chi-Square = 1.05

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff

1	46.50	6.63E-02	1.99E-03	6.57E-02	0.27	0.81

Sample ID : CAL_GAMMA17_CAN Acquisition date : 4-JAN-2006 09:49:06

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff
2	59.54	6.81E-02	2.05E-03	6.92E-02	-0.53	-1.60
3	88.03	6.89E-02	2.28E-03	6.95E-02	-0.28	-0.92
4	122.06	6.69E-02	2.04E-03	6.40E-02	1.46	4.44
5	165.85	5.36E-02	1.55E-03	5.52E-02	-0.99	-2.87
6	391.70	2.77E-02	7.71E-04	2.79E-02	-0.32	-0.90
7	661.66	1.76E-02	5.37E-04	1.70E-02	1.04	3.17
8	898.04	1.26E-02	3.49E-04	1.29E-02	-0.65	-1.79
9	1173.24	1.02E-02	2.80E-04	1.02E-02	0.08	0.22
10	1332.50	9.08E-03	2.40E-04	9.10E-03	-0.09	-0.24
11	1836.06	6.92E-03	1.92E-04	6.90E-03	0.07	0.20

Approved by: _____ Approval Date: 1 / 4 / 06

VAX/VMS Nuclide Identification Report Generated 4-JAN-2006 11:17:03.18

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration     : MCA0:[GAMMA]GAMMA17$1
Sample date       : 1-APR-2005 00:00:00. Acquisition date : 4-JAN-2006 09:49:06.
Sample ID         : CAL_GAMMA17_CAN      Sample quantity  : 1.00000E+00 LITER
Detector name     : GAMMA17              Detector geometry: GAMMA17
Elapsed live time: 0 01:00:00.00         Elapsed real time: 0 01:00:57.37  1.6%
Energy tolerance  : 2.00000 KEV          Analyst Initials : JPH1
Abundance limit   : 75.00000             Sensitivity      : 3.00000
Batch ID          :                      Detector SN#     : 30-TN10348
Matrix Spike DPM  :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	10	37.88	16943	51449	2.63	63.56	58	27	4.71E+00	3.0	8.25E+02
2	10	41.16	34375	70716	2.65	70.13	58	27	9.55E+00	2.0	
3	10	43.71	26751	45470	1.66	75.26	58	27	7.43E+00	1.8	
4	10	46.48	288204	40126	1.25	80.83	58	27	8.01E+01	0.2	
5	0	49.96	2633	40038	1.23	87.80	86	7	7.31E-01	12.8	
6	0	59.50	202601	48121	1.09	106.97	101	12	5.63E+01	0.3	
7	0	67.53	2293	34038	2.46	123.10	120	10	6.37E-01	15.2	
8	0	73.12	395	19535	1.31	134.32	132	6	1.10E-01	56.3	
9	3	86.09	2013	23843	1.49	160.37	157	15	5.59E-01	15.1	3.35E+00
10	3	88.04	188462	17186	1.09	164.29	157	15	5.24E+01	0.3	
11	0	112.02	365	8429	1.46	212.43	210	6	1.01E-01	40.2	
12	0	122.08	71296	17047	1.16	232.63	226	14	1.98E+01	0.5	
13	0	136.47	8831	10560	1.20	261.54	256	11	2.45E+00	2.5	
14	6	164.11	318	7052	1.35	317.04	313	14	8.82E-02	62.3	1.72E+00
15	6	165.88	40492	5810	1.16	320.59	313	14	1.12E+01	0.6	
16	0	180.34	82	4869	0.93	349.65	349	7	2.28E-02	141.2	
17	0	199.21	1320	6495	1.25	387.54	384	8	3.67E-01	10.9	
18	0	203.61	296	4555	1.47	396.38	394	6	8.23E-02	36.5	
19	0	254.98	749	5750	1.16	499.55	496	9	2.08E-01	18.6	
20	0	279.23	3626	6044	1.31	548.25	543	11	1.01E+00	4.5	
21	0	284.99	172	3682	1.36	559.81	558	7	4.77E-02	59.2	
22	0	310.79	319	3359	1.40	611.63	609	7	8.85E-02	30.7	
23	0	357.08	98	3091	0.52	704.60	703	7	2.72E-02	94.5	
24	0	391.73	21595	5981	1.36	774.21	767	13	6.00E+00	1.0	
25	0	501.25	207	2333	2.31	994.19	991	7	5.76E-02	39.2	
26	0	510.59	224	3715	1.70	1012.95	1008	10	6.22E-02	51.3	
27	0	561.51	96	2018	1.45	1115.23	1112	7	2.66E-02	78.3	
28	0	577.44	131	2029	1.11	1147.25	1144	7	3.64E-02	57.7	
29	0	618.32	67	2136	1.29	1229.36	1229	7	1.87E-02	114.5	
30	0	661.68	47441	5475	1.58	1316.46	1308	17	1.32E+01	0.6	
31	0	682.76	169	2787	1.53	1358.81	1356	9	4.68E-02	57.0	
32	0	813.79	639	2610	2.69	1622.05	1617	11	1.78E-01	16.0	
33	0	898.02	22547	4513	1.72	1791.27	1783	15	6.26E+00	0.9	
34	0	1003.36	85	1894	0.55	2002.91	2000	8	2.37E-02	89.1	
35	0	1046.07	159	1478	0.84	2088.73	2086	7	4.43E-02	40.8	
36	0	1055.13	98	2002	1.16	2106.93	2104	9	2.73E-02	82.8	
37	0	1173.22	46895	2807	1.92	2344.23	2334	21	1.30E+01	0.5	
38	0	1311.23	61	475	1.49	2621.56	2617	9	1.70E-02	65.2	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	4	1325.10	431	939	2.94	2649.43	2642	32	1.20E-01	17.3	6.24E+00
40	4	1332.49	42256	764	2.04	2664.29	2642	32	1.17E+01	0.5	
41	0	1641.64	91	256	1.91	3285.60	3282	8	2.54E-02	32.0	
42	0	1658.36	69	273	1.39	3319.21	3316	8	1.91E-02	43.3	
43	0	1836.07	12898	307	2.34	3676.44	3665	24	3.58E+00	1.0	
44	0	1919.01	51	107	3.92	3843.17	3837	13	1.42E-02	44.1	
45	0	1988.60	10	45	0.59	3983.05	3979	6	2.85E-03	107.7	
46	0	2010.72	30	66	1.32	4027.54	4022	9	8.47E-03	51.7	

Library Title :
Library file name : DKA300:[CANBERRA.GAMMA]CAL.NLB;1
Date printed : 6-DEC-2004 10:31:17.67
Number of nuclides : 10
Number of lines : 17

Nuclide Name	Half-Life	Nuclide Type	Key Line	Energy		Abundance
CO-57	271.74D		*	122.06	keV	85.51 %
				136.47	keV	10.47 %
CO-60	5.27Y			1173.24	keV	99.90 %
			*	1332.50	keV	99.98 %
Y-88	106.63D			898.04	keV	93.40 %
			*	1836.06	keV	99.38 %
CD-109	461.40D		*	88.03	keV	3.79 %
SN-113	115.09D		*	391.70	keV	64.90 %
CS-137	30.00Y		*	661.66	keV	85.12 %
CE-139	137.64D		*	165.85	keV	80.35 %
HG-203	46.60D			70.83	keV	4.75 %
				72.87	keV	8.00 %
				82.60	keV	3.55 %
			*	279.20	keV	77.30 %
PB-210	22.26Y		*	46.50	keV	4.05 %
AM-241	432.20Y		*	59.54	keV	35.90 %

Print Time : 14-JUN-2005 17:43:24.41
Certificate file name : DKA300:[CANBERRA.GAMMA]70530-278.CER;1
Certificate title : CAN
Certificate date : 1-APR-2005 12:00:00.00
Certificate quantity : 1.00000E+00

Rcd	Nuclide	Halflife	CAL/ INIT	Energy	Rate	%Abun	Activity (uCi)
1	AM-241	432.20Y	Yes	59.54	8.2730E+02	35.90	6.2283E-02
2	CD-109	462.60D	No	88.03	1.1530E+03	3.79	8.2222E-01
3	Co-57	271.79D	No	122.06	6.0100E+02	85.51	1.8996E-02
4	CE-139	137.60D	No	165.85	8.5780E+02	80.35	2.8853E-02
5	SN-113	115.10D	No	391.70	1.1560E+03	64.90	4.8141E-02
6	CS-137	30.07Y	Yes	661.66	7.6270E+02	85.12	2.4217E-02
7	Y-88	106.60D	No	898.04	3.0220E+03	93.40	8.7447E-02
8	Y-88	106.60D	Yes	1836.06	3.1560E+03	99.38	8.5829E-02
9	Co-60	5.27Y	Yes	1173.24	1.4150E+03	99.90	3.8282E-02
10	CO-60	5.27Y	No	1332.50	1.4300E+03	99.98	3.8655E-02
11	PB-210	22.30Y	No	46.50	1.2240E+03	4.05	8.1682E-01

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 • U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

70530-278

100 mL Solid in 100 mL Aluminum Can

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 and Pb-210 were calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in US NRC Regulatory Guide 4.15, Revision 1, February 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776. Density of solid matrix 1.15 g/cc.

Calibration Date: April 1, 2005 12:00 EST

ISOTOPE	GAMMA ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Pb-210	46.5	22.3	y	1224	3.0
Am-241	59.5	432.2	y	827.3	3.0
Cd-109	88	462.6	d	1153	3.3
Co-57	122	271.79	d	601.0	3.0
Ce-139	166	137.6	d	857.8	2.8
Hg-203	279	46.61	d	1856	2.7
Sn-113	392	115.1	d	1156	2.6
Cs-137	662	30.07	y	762.7	3.0
Y-88	898	106.6	d	3022	2.6
Co-60	1173	5.271	y	1415	2.7
Co-60	1332	5.271	y	1430	2.6
Y-88	1836	106.6	d	3156	2.6

P O NUMBER 2832RD, Item 3

SOURCE PREPARED BY: M. Dimitrova

M. Dimitrova, Radiochemist

Q A APPROVED: M. Mnf 5-12-05

This standard will expire one year after the calibration date.

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(843)556-8171

Gamma Spectrometer Geometry Calibration Package

Detector: GAMMA 19 Geometry: CAN

		YES	NO	Comments
1)	Is all calibration standard information enclosed for:			
	the primary standard certificate?	✓		
	the secondard standard(s) documentation?	NA		
	the nuclide library used?	✓		
	the VMS certificate file?	✓		
2)	Is the detector efficiency curve printout included?	✓		
3)	Is the efficiency calibration report included and reviewed?	✓		
4)	Is the raw count data included for:			
	the calibration peak report?	✓		
	the calibration verification PEAK report?	✓		
	the calibration verification NID report?	✓		
	the last instrument background?	✓		
5)	Are the calibration verification calculations included?	✓		
6)	Are the instrument settings included: amp, HVPS, ADC settings?	✓		

Prepared By: _____ Date: 2/21/06

Reviewed By: Michael Fulton Date: 3/23/06

Effective Date: 2/16/06

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

70530-278

100 mL Solid in 100 mL Aluminum Can

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 and Pb-210 were calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in US NRC Regulatory Guide 4.15, Revision 1, February 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776.
Density of solid matrix 1.15 g/cc.

Calibration Date: April 1, 2005 12:00 EST

ISOTOPE	GAMMA ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Pb-210	46.5	22.3	y	1224	3.0
Am-241	59.5	432.2	y	827.3	3.0
Cd-109	88	462.6	d	1153	3.3
Co-57	122	271.79	d	601.0	3.0
Ce-139	166	137.6	d	857.8	2.8
Hg-203	279	46.61	d	1856	2.7
Sn-113	392	115.1	d	1156	2.6
Cs-137	662	30.07	y	762.7	3.0
Y-88	898	106.6	d	3022	2.6
Co-60	1173	5.271	y	1415	2.7
Co-60	1332	5.271	y	1430	2.6
Y-88	1836	106.6	d	3156	2.6

P O NUMBER 2832RD, Item 3

SOURCE PREPARED BY: M. Dimitrova
M. Dimitrova, Radiochemist

Q A APPROVED: M. Mn 5-12-05

This standard will expire one year after the calibration date.

Nuclide Library Editor: ND_SC_LIB:CAL 14-FEB-2006 13:08:44.01

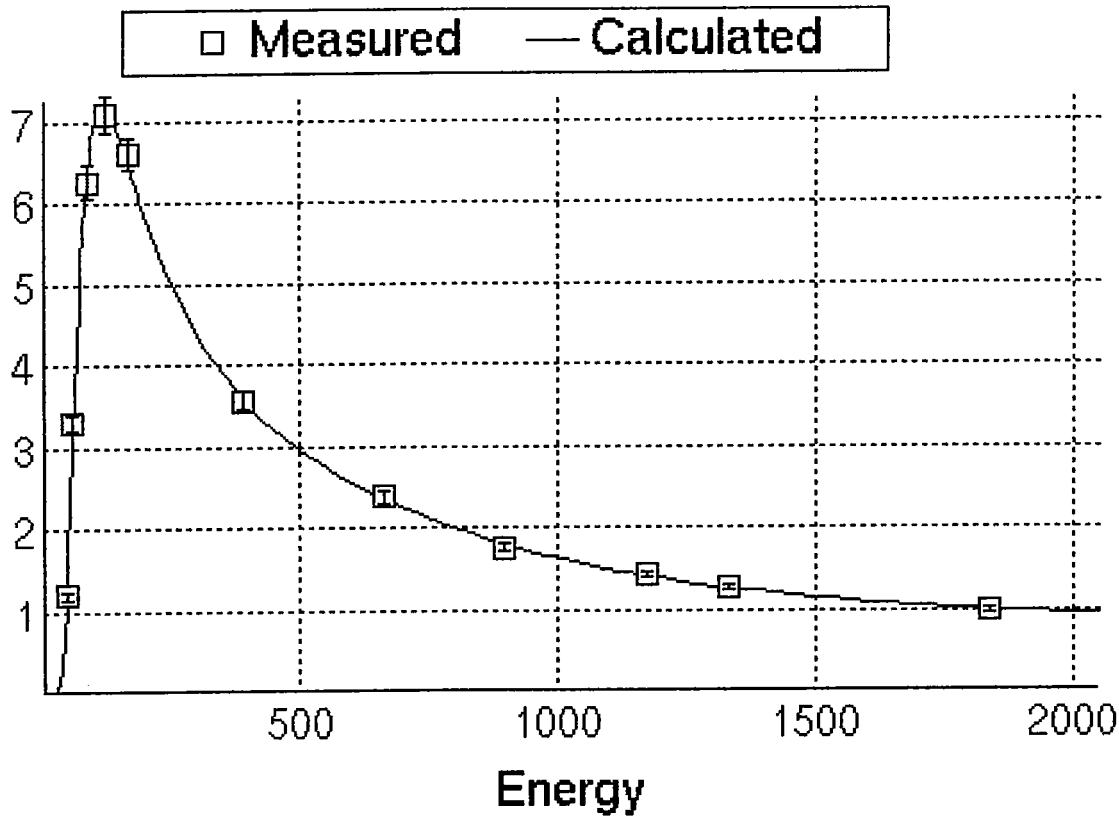
Title: Mixed Gamma + Am-241 & Pb-210

Nuclide Name	Nuclide Type	Half Life	Key Line?	No Wtmean?	Energy (keV)	%Abn
CO-57		271.74D	*		122.06	85.51
					136.47	10.47
CO-60		5.27Y			1173.24	99.90
			*		1332.50	99.98
Y-88		106.63D			898.04	93.40
			*		1836.06	99.38
CD-109		461.40D	*		88.03	3.79
SN-113		115.09D	*		391.70	64.90
CS-137		30.00Y	*		661.66	85.12
CE-139		137.64D	*		165.85	80.35
HG-203		46.60D			70.83	4.75
					72.87	8.00
					82.60	3.55
			*		279.20	77.30
PB-210		22.26Y	*		46.50	4.05
AM-241		432.20Y	*		59.54	35.90
					0.00	0.00

Certificate Editor: ND_SC_CER:70530-278 14-FEB-2006 11:19:59.14

Title: CAN
Quantity: 1.00 Assay date: 1-APR-2005 12:00:00.0

Nuclide Name	Half Life	Energy (keV)	Rate	% Err	% Abn	CAL/INIT
AM-241	432.20Y	59.5	827	3.00	35.9	Yes
CD-109	462.60D	88.0	1153	3.30	3.8	No
Co-57	271.79D	122.1	601	3.00	85.5	No
CE-139	137.60D	165.9	858	2.80	80.3	No
SN-113	115.10D	391.7	1156	2.60	64.9	No
CS-137	30.07Y	661.7	763	3.00	85.1	Yes
Y-88	106.60D	898.0	3022	2.60	93.4	No
Y-88	106.60D	1836.1	3156	2.60	99.4	Yes
Co-60	5.27Y	1173.2	1415	2.70	99.9	Yes
CO-60	5.27Y	1332.5	1430	2.60	100.0	No
PB-210	22.30Y	46.5	1224	3.00	4.1	No



Datasource: DKA0:[CANBERRA.GAMMA.SCUSR.ARCHIVE]CAL_GAM19_CAN_29.CNF;1
ln(Eff) = -4.054e+00 + 8.900e-01X + -3.012e-02X^2 + -1.294e-01X^3
+ 1.284e-01X^4 + -3.956e-02X^5
where: X = ln(9.413e+02/E [keV]); [CHISQ = 6.470e-01]

Sample ID : 70530-278 Acquisition date : 15-FEB-2006 15:29:29

Energy = 0.1048 + 0.5006*Channel + -9.3161E-08*(Channel**2)

Nbr	Centroid Channel	True Energy	Computed Energy	Difference
1	92.90	46.50	46.61	-0.112
2	118.77	59.54	59.56	-0.026
3	175.71	88.03	88.07	-0.032
4	243.60	122.06	122.05	0.011
5	331.05	165.85	165.82	0.029
6	781.92	391.70	391.48	0.217
7	1321.69	661.66	661.60	0.065
8	1794.43	898.04	898.12	-0.077
9	2344.55	1173.24	1173.30	-0.063
10	2663.01	1332.50	1332.58	-0.078
11	3669.79	1836.06	1836.00	0.067

FWHM Calibration Report

FWHM = 1.116 + 2.5220E-02*(Energy**1/2)

Nbr	Energy	True FWHM	Computed FWHM	Difference
1	46.50	1.30	1.29	0.007
2	59.54	1.38	1.31	0.071
3	88.03	1.38	1.35	0.027
4	122.06	1.37	1.40	-0.023
5	165.85	1.43	1.44	-0.008
6	391.70	1.55	1.62	-0.066
7	661.66	1.70	1.77	-0.066
8	898.04	1.85	1.87	-0.025
9	1173.24	1.98	1.98	0.000
10	1332.50	2.09	2.04	0.048
11	1836.06	2.23	2.20	0.035

MNP 3/23/06

Eff = exp(a2 + a3*x + a4*x**2 + a5*x**3 + a6*x**4 + a7*x**5), x=ln(a1/energy)

a1	a2	a3	a	a5	a6	a7
941.3	-4.054	0.8900	-3.0119E-02	-0.1294	0.1284	-3.9562E-02

Average Deviation = 1.40 % Reduced Chi-Square = 0.647

Nbr	Energy (keV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff
1	46.50	1.21E-02	3.81E-04	1.23E-02	-0.41	-1.29
2	59.54	3.32E-02	1.01E-03	3.22E-02	0.94	2.88
3	88.03	6.27E-02	2.08E-03	6.43E-02	-0.77	-2.57
4	122.06	7.08E-02	2.17E-03	7.16E-02	-0.38	-1.17
5	165.85	6.60E-02	1.92E-03	6.49E-02	0.56	1.64
6	391.70	3.58E-02	1.01E-03	3.58E-02	-0.03	-0.08
7	661.66	2.38E-02	7.23E-04	2.36E-02	0.32	0.98
8	898.04	1.77E-02	4.89E-04	1.81E-02	-0.88	-2.44
9	1173.24	1.44E-02	3.94E-04	1.43E-02	0.31	0.85
10	1332.50	1.29E-02	3.40E-04	1.28E-02	0.38	0.99
11	1836.06	1.01E-02	2.77E-04	1.01E-02	-0.18	-0.49

VMS Gamma Spectroscopy Report generated 16-FEB-2006 08:06:00

Configuration : DKA0:[CANBERRA.GAMMA.SCUSR.ARCHIVE]CAL_GAM19_CAN_29.CNF;1

---- Sample Information ----

Sample Title : CAN
Sample ID : 70530-278 Sample Quantity : 1.00000E+00 std
Sample Type : CAN Sample Geometry :
Sample Number : -3 Spctrm Collector : GAMMA
Sample Collector : Sample Analyst : GAMMA

---- Sample Deposition Information ----

Dep. Correction? : No Dep. Duration :
Deposition Start : Deposition End : 1-APR-2005 12:00:00.

---- Sample Decay/Count Information ----

Sample Date : 1-APR-2005 12:00:00. Acquisition date : 15-FEB-2006 15:29:29
Decay time : 320 03:29:29.19 % dead time : 1.5%
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:54.77

---- Detector Parameters ----

Energy cal. time : 16-FEB-2006 08:01:15 Energy cal. oper.: GAMMA
Detector name : GAMMA19 Counting geometry: CAN
Effic. cal. time : 16-FEB-2006 08:01:37 Effic. cal. oper.: GAMMA

---- Processing Parameters ----

Start channel : 1 End channel : 4096
Sensitivity : 3.00000 Gaussian Sens. : 10.00000
Critical level? : No Propagate Errors?: No
Efficiency Type : EMPIRICA Library-based eff: No
Energy tolerance : 2.00000 Half life ratio : 8.00000
Abundance limit : 75.00000 WTM error limit : 3.00000
MDA Width (FWHM) : 3.00000 MDA Confid Level : 5.00000 %

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	10	8.83	33649	19852	2.88	17.42	11	24	9.35E+00	1.3	8.07E+01
2	10	11.66	14967	36009	2.13	23.08	11	24	4.16E+00	3.0	
3	10	14.00	5142	29719	1.33	27.76	11	24	1.43E+00	5.8	
4	0	46.44	51897	44824	1.40	92.56	85	13	1.44E+01	0.9	
5	0	59.56	98644	40075	1.38	118.77	111	14	2.74E+01	0.5	
6	0	67.60	722	18060	1.87	134.82	132	7	2.01E-01	31.0	
7	0	88.07	161156	37236	1.38	175.71	168	15	4.48E+01	0.4	
8	0	122.05	67695	20825	1.37	243.60	236	16	1.88E+01	0.6	
9	0	136.46	8422	11774	1.37	272.39	267	12	2.34E+00	2.8	
10	0	165.82	40633	13494	1.43	331.05	323	16	1.13E+01	0.8	
11	0	255.02	1031	6778	1.40	509.26	505	10	2.86E-01	15.3	
12	0	279.04	2087	6209	1.44	557.24	553	10	5.80E-01	7.4	
13	0	334.29	70	3613	1.23	667.63	665	7	1.94E-02	143.0	
14	0	354.82	90	4094	1.45	708.66	707	8	2.49E-02	124.0	
15	0	360.26	268	4412	2.26	719.53	716	9	7.45E-02	45.1	
16	0	379.76	86	4034	1.29	758.49	756	8	2.39E-02	128.6	
17	0	391.48	21672	7111	1.55	781.92	775	14	6.02E+00	1.1	
18	0	416.53	76	3957	1.04	831.97	829	8	2.12E-02	143.1	
19	0	437.81	185	3903	2.31	874.48	871	8	5.14E-02	59.0	
20	0	457.39	1530	6655	2.43	913.61	907	13	4.25E-01	11.3	
21	0	511.19	567	4147	3.00	1021.11	1016	11	1.58E-01	22.4	
22	0	524.79	159	2769	1.68	1048.30	1045	8	4.42E-02	57.9	
23	0	661.60	64034	5519	1.70	1321.69	1314	16	1.78E+01	0.5	

24	0	790.27	36	2199	1.27	1578.87	1574	8	9.95E-03	227.8	
25	0	814.25	222	2643	1.78	1626.79	1623	9	6.18E-02	42.2	
26	0	820.75	131	2327	1.50	1639.78	1637	8	3.64E-02	64.2	
27	0	898.12	23960	5338	1.85	1794.43	1786	17	6.66E+00	1.0	
28	0	913.87	80	2736	1.32	1825.92	1822	8	2.22E-02	114.1	
29	0	1008.26	74	1958	0.98	2014.60	2012	7	2.06E-02	99.8	
30	0	1173.30	65312	2982	1.98	2344.55	2334	21	1.81E+01	0.4	
31	5	1326.15	616	1021	3.28	2650.16	2640	32	1.71E-01	15.2	1.07E+01
32	5	1332.58	59233	627	2.09	2663.01	2640	32	1.65E+01	0.4	
33	0	1450.32	39	423	2.29	2898.45	2894	10	1.08E-02	100.5	
34	0	1836.00	14276	306	2.23	3669.79	3658	24	3.97E+00	0.9	
35	0	1865.64	45	198	0.90	3729.10	3719	16	1.24E-02	72.5	
36	0	1923.59	28	126	3.30	3845.01	3836	12	7.67E-03	84.9	
37	0	2020.45	7	204	2.77	4038.79	4026	17	2.07E-03	440.8	

VMS Gamma Spectroscopy Report generated 17-FEB-2006 08:59:39

Configuration : DKA0:[CANBERRA.GAMMA.SCUSR.ARCHIVE]SMP_70530278_GAM19_CAN_32.CNF;1

---- Sample Information ----

Sample Title	: Can Calibration Verification		
Sample ID	: 70530-278	Sample Quantity	: 1.00000E+00 ea
Sample Type	: can	Sample Geometry	:
Sample Number	: 32	Spctrm Collector	: GAMMA
Sample Collector	:	Sample Analyst	: GAMMA

---- Sample Deposition Information ----

Dep. Correction?	: No	Dep. Duration	:
Deposition Start	:	Deposition End	: 1-APR-2005 12:00:00.

---- Sample Decay/Count Information ----

Sample Date	: 1-APR-2005 12:00:00.	Acquisition date	: 17-FEB-2006 07:37:31
Decay time	: 321 19:37:31.59	% dead time	: 1.5%
Elapsed live time	: 0 01:00:00.00	Elapsed real time	: 0 01:00:54.59

---- Detector Parameters ----

Energy cal. time	: 16-FEB-2006 08:01:15	Energy cal. oper.	: GAMMA
Detector name	: GAMMA19	Counting geometry	: CAN
Effic. cal. time	: 16-FEB-2006 08:01:37	Effic. cal. oper.	: GAMMA

---- Processing Parameters ----

Start channel	: 1	End channel	: 4080
Sensitivity	: 3.00000	Gaussian Sens.	: 10.00000
Critical level?	: No	Propagate Errors?	: Yes
Efficiency Type	: EMPIRICA	Library-based eff	: No
Energy tolerance	: 2.00000	Half life ratio	: 8.00000
Abundance limit	: 75.00000	WTM error limit	: 3.00000
MDA Width (FWHM)	: 3.00000	MDA Confid Level	: 5.00000 %

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
10	9.57	37616	33822	3.09	18.90	11	24	2.9	3.34E+02	
10	13.62	5552	24162	1.21	27.00	11	24	9.9		
0	46.44	52595	44411	1.39	92.55	85	13	1.9		BI-210
										PB-210
0	59.55	99794	43768	1.38	118.74	111	16	1.1		AM-241
0	67.47	1460	22671	2.30	134.57	131	9	37.5		
0	88.09	158297	37008	1.38	175.76	169	15	0.7		NP-237
										SN-126
										SN-126
										CD-109
0	103.27	366	9991	1.57	206.08	203	7	91.2		
0	122.05	67193	19801	1.39	243.61	236	15	1.2		CO-57
0	136.48	8353	11839	1.40	272.42	267	12	5.7		CO-57
0	165.84	39889	13481	1.44	331.09	323	15	1.6		CE-139
0	218.50	322	7504	1.86	436.28	433	9	97.8		
0	254.98	812	5596	1.35	509.18	505	8	32.7		
0	279.01	1980	6186	1.47	557.19	553	10	15.5		HG-203
0	391.51	21580	6998	1.56	781.96	775	14	2.1		SN-113
0	439.73	277	4368	1.33	878.32	875	9	86.8		

Sample ID : 70530-278 Acquisition date : 17-FEB-2006 07:37:31

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	457.21	1437	6229	2.30	913.25	908	12	22.6		
0	510.77	304	4386	1.88	1020.27	1014	11	85.0		ANH-511
0	661.61	64338	5713	1.69	1321.72	1313	17	1.0		BA-137M
										CS-137
0	720.34	75	2216	1.23	1439.10	1434		8220.1		
0	735.09	59	2455	0.93	1468.58	1461		9306.4		
0	782.39	80	1845	1.37	1563.12	1560		7178.6		
0	814.05	511	3106	1.53	1626.38	1621	12	44.5		
0	898.18	22842	5191	1.81	1794.55	1788	15	1.9		Y-88
0	1059.97	24	2025	1.40	2117.98	2113		8639.1		
0	1092.18	108	1466	1.35	2182.36	2180		6113.7		
0	1173.36	65364	3215	1.99	2344.65	2334	22	0.9		CO-60
0	1196.93	85	1215	0.65	2391.79	2385		12165.8		
0	1202.72	100	779	2.19	2403.36	2400		9102.6		
3	1325.71	356	934	2.71	2649.27	2641	34	39.5	8.00E+00	
3	1332.65	58636	633	2.08	2663.15	2641	34	0.8		CO-60
0	1529.31	37	575	1.97	3056.40	3047		12260.0		
0	1567.44	63	550	1.80	3132.66	3127		10141.7		
0	1595.51	21	767	0.95	3188.79	3183		13558.5		
0	1722.91	178	693	12.98	3443.61	3428	36	94.9		
0	1836.11	14212	335	2.23	3670.03	3660	20	1.8		Y-88
0	1953.73	30	118	1.05	3905.30	3897		13152.7		
0	1983.03	20	94	2.34	3973.93	3968		9179.2		

Sample ID : 70530-278 Acquisition date : 17-FEB-2006 07:37:31

Total number of lines in spectrum 37
Number of unidentified lines 14
Number of lines tentatively identified by NID 23 62.16%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/ea	Wtd Mean Decay Corr pCi/ea	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	270.90D	2.28	8.332E+03	1.898E+04	0.102E+04	5.40	
CO-60	5.27Y	1.12	3.444E+04	3.867E+04	0.158E+04	4.10	
Y-88	106.60D	8.11	1.042E+04	8.449E+04	0.390E+04	4.62	
CD-109	464.00D	1.62	4.871E+05	7.878E+05	0.647E+05	8.21	
SN-113	115.10D	6.95	6.963E+03	4.836E+04	0.313E+04	6.47	
SN-126	1.00E+05Y	1.00	4.990E+04	4.990E+04	0.635E+04	12.73	
BA-137M	30.17Y	1.02	2.278E+04	2.324E+04	0.151E+04	6.51	
CS-137	30.17Y	1.02	2.408E+04	2.457E+04	0.161E+04	6.54	
CE-139	137.66D	5.06	5.740E+03	2.902E+04	0.203E+04	7.00	
HG-203	46.61D	120.	4.158E+02	4.983E+04	0.855E+04	17.16	
BI-210	22.26Y	1.03	8.007E+05	8.230E+05	0.678E+05	8.23	
PB-210	22.26Y	1.03	8.007E+05	8.230E+05	0.678E+05	8.23	
NP-237	2.14E+06Y	1.00	1.465E+05	1.465E+05	0.325E+05	22.21	
AM-241	432.20Y	1.00	6.476E+04	6.485E+04	0.605E+04	9.33	
ANH-511	1.00E+09Y	1.00	7.847E+01	7.847E+01	6.688E+01	85.23	
	Total Activity :		2.463E+06	3.012E+06			

Grand Total Activity : 2.463E+06 3.012E+06

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

VMS Gamma Spectroscopy Report generated 20-FEB-2006 14:22:43

Configuration : DKA0:[CANBERRA.GAMMA.SCUSR.ARCHIVE]BKG_GAM19__21.CNF;1

---- Sample Information ----

Sample Title : Weekly Background
Sample ID : Bkg
Sample Type : bkg
Sample Number : 21
Sample Collector :
Sample Quantity : 1.00000E+00 ea
Sample Geometry :
Spctrm Collector : GAMMA
Sample Analyst : GAMMA

---- Sample Deposition Information ----

Dep. Correction? : No
Deposition Start :
Dep. Duration :
Deposition End : 14-FEB-2006 00:00:00

---- Sample Decay/Count Information ----

Sample Date : 14-FEB-2006 00:00:00
Decay time : 0 14:32:17.58
Elapsed live time: 0 16:40:00.00
Acquisition date : 14-FEB-2006 14:32:17
% dead time : 0.0%
Elapsed real time: 0 16:40:05.13

---- Detector Parameters ----

Energy cal. time : 14-FEB-2006 08:16:41
Detector name : GAMMA19
Effic. cal. time : 14-FEB-2006 08:17:01
Energy cal. oper.: GAMMA
Counting geometry:
Effic. cal. oper.: GAMMA

---- Processing Parameters ----

Start channel : 1
Sensitivity : 3.00000
Critical level? : No
Efficiency Type : SPLINE
Energy tolerance : 2.00000
Abundance limit : 75.00000
MDA Width (FWHM) : 3.00000
End channel : 4096
Gaussian Sens. : 10.00000
Propagate Errors?: No
Library-based eff: No
Half life ratio : 8.00000
WTM error limit : 3.00000
MDA Confid Level : 5.00000 %

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5.03	35995	6100	1.38	9.75	6	10	6.00E-01	0.7	
2	0	10.74	277	2797	0.91	21.16	19	6	4.61E-03	31.3	
3	0	46.69	161	646	1.31	92.98	89	9	2.69E-03	29.6	
4	0	64.19	524	961	1.51	127.95	122	15	8.73E-03	13.6	
5	0	69.94	69	467	0.65	139.44	137	6	1.16E-03	50.5	
6	0	77.16	35	787	1.47	153.86	150	9	5.82E-04	147.3	
7	0	84.36	56	706	1.57	168.25	164	9	9.30E-04	86.9	
8	1	87.37	91	361	1.19	174.26	172	21	1.51E-03	32.4	1.03E+00
9	1	92.68	701	598	1.46	184.87	172	21	1.17E-02	7.4	
10	1	139.93	86	605	1.52	279.28	272	20	1.44E-03	52.5	7.89E-01
11	1	143.91	100	551	1.36	287.24	272	20	1.67E-03	41.3	
12	0	185.27	472	641	1.29	369.87	364	11	7.87E-03	11.3	
13	0	198.74	93	464	0.90	396.78	394	8	1.55E-03	41.7	
14	0	238.39	403	662	1.41	476.02	470	13	6.72E-03	14.1	
15	0	445.82	23	217	1.40	890.54	889	8	3.83E-04	112.1	
16	0	510.82	1438	421	2.69	1020.45	1012	19	2.40E-02	4.3	
17	0	535.80	22	161	1.39	1070.37	1066	8	3.61E-04	104.9	
18	0	567.30	72	369	0.79	1133.34	1128	13	1.20E-03	56.5	
19	0	582.62	177	284	2.00	1163.95	1155	16	2.95E-03	22.6	
20	0	644.75	38	167	1.09	1288.13	1283	11	6.36E-04	68.4	
21	0	683.30	34	159	2.28	1365.18	1361	12	5.61E-04	76.9	
22	0	688.46	25	89	0.75	1375.51	1372	7	4.20E-04	65.7	
23	0	802.89	67	186	2.11	1604.25	1599	13	1.12E-03	43.8	

2/2/06

24	0	874.45	20	94	1.37	1747.29	1744	8	3.38E-04	85.7
25	0	911.19	71	118	1.21	1820.74	1814	12	1.18E-03	33.1
26	0	1051.51	32	78	2.60	2101.29	2097	10	5.29E-04	54.3
27	6	1082.59	15	42	1.55	2163.42	2161	11	2.49E-04	68.5 1.62E+00
28	6	1085.47	16	37	1.20	2169.19	2161	11	2.62E-04	64.2
29	0	1126.42	27	60	1.63	2251.06	2246	9	4.52E-04	55.7
30	0	1153.75	43	61	4.46	2305.71	2300	12	7.19E-04	40.3
31	0	1218.27	52	156	5.92	2434.72	2419	23	8.74E-04	64.2
32	0	1329.43	44	117	1.09	2657.01	2648	20	7.38E-04	61.3
33	0	1460.88	51	63	1.58	2919.90	2914	12	8.53E-04	34.0
34	0	1715.55	33	37	4.42	3429.28	3422	15	5.55E-04	43.5
35	0	1809.14	16	30	0.65	3616.50	3610	10	2.67E-04	68.8
36	0	1848.60	43	33	7.33	3695.43	3686	17	7.25E-04	34.2
37	0	1857.35	49	29	8.27	3712.94	3703	19	8.23E-04	29.6
38	0	2032.94	19	47	2.03	4064.23	4056	16	3.15E-04	85.0
39	0	2045.50	5	45	0.63	4089.36	4080	11	8.60E-05	253.4

Gamma Spectroscopy Calibration Verification

Instrument: Gamma 19 Calibration Date: 2/16/2006

Geometry: CAN Standard Id: 70530-278

Isotope		CALIBRATED ACTIVITY (PCI)	MEASURED ACTIVITY (PCI)	DIFFERENCE %
Pb-210		8.1682E+05	8.230E+05	0.76
Am-241		6.2283E+04	6.485E+04	4.12
Cd-109		8.2222E+05	7.878E+05	-4.19
Co-57		1.8996E+04	1.898E+04	-0.08
Ce-139		2.8853E+04	2.902E+04	0.58
Sn-113		4.8141E+04	4.836E+04	0.45
Cs-137		2.4217E+04	2.457E+04	1.46
Co-60	1332.5	3.8655E+04	3.867E+04	0.04
Y-88	1836.06	8.5829E+04	8.449E+04	-1.56

Prepared By: _____ Date: 2/17/06

Reviewed By: _____ Date: 3/23/06

Standard Parameter Editor: GAM19$1 21-FEB-2006 08:19:34.75

Preset Time and Totals Parameters

Preset Times
 Live: 0 00:05:00.00
 Real:
 Maximum Live Time:

Preset Totals
 Total: 0
 Start Channel: 1
 End Channel: 4096

Front-End Setup Summary

 HVPS Address: NI82E1:1 HVPS ID: 0
 HVPS Voltage: 3000.000

 Amp Address: Amp Id: 0
 Amp Gain: 4.05204

 ADC Address: ADC Id: 0
 ADC Conv. Gain: 8192 ADC Range: 8192

 DSP Address: NI82E1:1 DSP ID: 0

 Sample Changer Addr:
 Negative Sample Changer polarity No

 ICB Nim Error: No Bad Calibration: No

High Voltage Power Supply Module

Address: NI82E1:1 Type: DSA-2000 ID: 0

Limit:	4000.000	Overload latch enable No
Voltage:	3000.000	Inhibit latch enable No
Status:	On	Negative Output polarity No
5V/12V inhibit:	5V	Rely on module for ramp No

DSA-2000 HVPS Range: 5000.0

ADC Module

Address: Type: DSA-2000 ID: 0

Conv. Gain:	8192	Acq. Mode:	PHA
Range:	8192	Coinc. Mode:	Early
Offset:	0	Peak Detect:	Auto
LLD:	0.10	Anti-coincidence	No
ULD:	100.00	Non-overlap tranfser	No
Zero:	0.00		

Amplifier Module

Address:		Type:	DSA-2000	ID:	0

Coarse gain:	5.0		BLR Mode:	Auto	
Fine gain:	0.80		LTC Mode:	On	
S-fine gain:	0.01		Input Mode:	Normal	
Shape Mode:			Input Polarity:	Positive	
Pole Zero:	3255		Inh. Polarity:	Positive	
Time Const:	0.0	µsec	Pileup Reject:	Off	

DSP Module

Address:	NI82E1:1	Type:	DSA-2000	ID:	0

Coarse gain:	5.0	Gain Centroid:	7680
Fine gain:	0.7967	Gain Window:	8
S-fine gain:	0.013729	Gain Spacing:	64
Pole Zero:	3255	Gain Ratio:	1.000
Coinc. mode:	Anti.	Zero Centroid:	512
Offset:	0	Zero Window:	8
LLD:	0.10	Zero Spacing:	64
Zero:	0.000	Zero Ratio:	1.000
Conv. Gain:	8192	Gain Rate div:	1
ADC Range:	8192	Zero Rate div:	1
FDisc Mode:	Auto	Gain Corr. rng:	Ge
Fast Disc.:	1.000	Zero Corr. rng:	Ge
Inp. Polarity:	Positive	Zero Mode:	Off
Inh. Polarity:	Positive	Gain Mode:	Off
Rise Time:	18.400	Preamp Type:	RC
Flat Top:	1.200	PUR Mode:	On
BLR Mode:	Auto	PUR Guard:	1.1
Live Time Trim:	250	TRP Inhibit:	Reset

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(803)556-8171

Gamma Spectrometer Geometry Calibration Package

Detector: Well Geometry: CAN

		YES	NO	Comments
1)	Is all calibration standard information enclosed for:			
	the primary standard certificate?	✓		
	the secondard standard(s) documentation?			N/A
	the nuclide library used?	✓		
	the VMS certificate file?	✓		
2)	Is the detector efficiency curve printout included?		✓	
3)	Is the efficiency calibration report included and reviewed?	✓		
4)	Is the raw count data included for:			
	the calibration peak report?	✓		
	the calibration verification PEAK report?	✓		
	the calibration verification NID report?	✓		
	the last instrument background?	✓		
5)	Are the calibration verification calculations included?	✓		
6)	Are the instrument settings included:			
	amp, HVPS, ADC settings?	✓		

Prepared By: [signature] Date: 12/15/05

Reviewed By: [signature] Date: 12/15/05

Effective Date: 12/14/05

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(803)556-8171

Gamma Spectrometer Front End Electronics Setup

Detector: Well

Date Performed: 12/12/05 Performed By: Michael Fitton

High Voltage Power Supply	***Spectroscopy Amplifier***
Model No. 3106D High Voltage 2.5 kV	Model No. 2026 Course Gain 20 Fine Gain 0.542 Time Constant 4 μ sec. Input polarity Positive BSLR rate N/A BSLR mode N/A Threshold N/A
ADC Model No. 8701 Gain 4000	
AIM Module Model No. 556A Address NIE Ø4:2	

Gamma Spectroscopy Calibration Verification

Instrument: Well Calibration Date: 12/14/2005

Geometry: CAN Standard Id: 70530-278

Isotope		CALIBRATED ACTIVITY (PCI)	MEASURED ACTIVITY (PCI)	DIFFERENCE %
Pb-210		8.1682E+05	7.865E+05	-3.71
Am-241		6.2283E+04	6.213E+04	-0.25
Cd-109		8.2222E+05	8.102E+05	-1.46
Co-57		1.8996E+04	1.950E+04	2.65
Ce-139		2.8853E+04	2.851E+04	-1.19
Sn-113		4.8141E+04	4.723E+04	-1.89
Cs-137		2.4217E+04	2.487E+04	2.70
Co-60	1332.5	3.8655E+04	3.810E+04	-1.44
Y-88	1836.06	8.5829E+04	8.701E+04	1.38

Prepared By: [signature] Date: 12/15/05

Reviewed By: [signature] Date: 12/15/05

Verified:

VMS Quality Assurance Report V1.3 Generated 11-DEC-2005 12:16:35

QA filename : DKA300:[CANBERRA.GAMMA]QC_BKG_WELL.QAF;2

Sample ID : BKG_WELL Sample quantity : 1.80 LITER
Sample date : 10-DEC-2005 00:00:00 Acquisition date : 10-DEC-2005 19:27:01
Elapsed live time: 0 16:40:00.00 Elapsed real time: 0 16:40:12.72

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
BACKGROUND (GROSS COUNTS)	8.07E+04	1.24E+05	1.01E+05	
BACKGROUND (CPS)	1.34	2.06	1.68	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____ Approval Date: 12 / 11 / 05

VAX/VMS Nuclide Identification Report Generated 14-DEC-2005 18:19:29.84

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_WELL_CAN.CNF;1
Sample date       : 1-APR-2005 12:00:00. Acquisition date : 14-DEC-2005 17:17:48
Sample ID         : VER_WELL_CAN         Sample quantity  : 1.00000E+00 LITER
Detector name     : WELL                 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00         Elapsed real time: 0 01:01:15.52  2.1%
Energy tolerance : 2.00000 KEV           Analyst Initials : MJH1
Abundance limit   : 75.00000            Sensitivity      : 3.00000
Batch ID          :                      Detector SN#     : 3941466
Matrix Spike DPM :                       LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	32.94	8090	42222	1.45	64.85	62	8	2.25E+00	4.5	
2	1	36.16	2099	10359	1.36	71.25	70	27	5.83E-01	6.1	3.83E+02
3	1	40.19*	6404	41044	1.37	79.25	70	27	1.78E+00	5.7	
4	1	42.20	7325	40817	1.38	83.25	70	27	2.03E+00	5.1	
5	1	46.51*	126212	39800	1.39	91.80	70	27	3.51E+01	0.4	
6	0	59.47	120117	56340	1.32	117.56	110	15	3.34E+01	0.5	
7	10	66.54	2603	25638	2.05	131.60	126	25	7.23E-01	12.0	3.80E+00
8	10	69.04	3337	46040	2.81	136.56	126	25	9.27E-01	15.1	
9	10	72.96*	1748	35224	2.27	144.35	126	25	4.86E-01	21.2	
10	0	88.07*	140788	36704	1.32	174.36	168	14	3.91E+01	0.4	
11	0	122.09	58293	20487	1.34	241.96	234	15	1.62E+01	0.7	
12	0	136.50	7151	11280	1.33	270.59	266	11	1.99E+00	3.1	
13	0	156.62	194	6859	1.39	310.56	308	7	5.40E-02	71.0	
14	0	165.92*	37327	11395	1.39	329.05	323	13	1.04E+01	0.8	
15	0	199.37*	534	6782	1.82	395.51	391	9	1.48E-01	28.2	
16	0	255.10	777	6322	1.42	506.25	502	10	2.16E-01	19.5	
17	0	279.27*	3871	5995	1.53	554.28	549	11	1.08E+00	4.2	
18	0	309.70	233	4389	1.90	614.75	612	9	6.48E-02	51.6	
19	0	391.71*	19069	7046	1.52	777.72	769	16	5.30E+00	1.2	
20	0	511.27*	337	3672	1.31	1015.34	1011	11	9.37E-02	35.4	
21	0	530.86*	155	1686	1.02	1054.28	1052	6	4.31E-02	42.7	
22	0	573.83	91	1923	1.59	1139.69	1137	7	2.54E-02	80.4	
23	0	610.33*	24	1687	0.73	1212.23	1211	6	6.56E-03	276.8	
24	0	625.88	102	2504	1.45	1243.14	1239	9	2.84E-02	88.7	
25	0	629.80*	139	1633	1.14	1250.94	1248	6	3.87E-02	46.7	
26	0	661.67*	36964	5440	1.70	1314.29	1305	18	1.03E+01	0.7	
27	0	690.27	124	2402	2.16	1371.14	1367	9	3.45E-02	71.8	
28	0	744.04	100	1822	1.25	1478.03	1476	8	2.78E-02	74.3	
29	0	777.53*	126	1713	1.47	1544.61	1541	8	3.50E-02	57.5	
30	0	803.35*	96	1015	0.93	1595.95	1594	5	2.67E-02	50.7	
31	0	814.14*	429	2506	1.60	1617.41	1612	11	1.19E-01	23.1	
32	0	849.87	77	1407	1.21	1688.44	1685	6	2.15E-02	77.4	
33	0	875.35	98	1489	1.21	1739.10	1736	6	2.71E-02	63.3	
34	0	898.03*	20561	4400	1.83	1784.19	1775	17	5.71E+00	1.0	
35	0	1069.73	33	2166	3.43	2125.61	2118	11	9.17E-03	273.0	
36	0	1114.84*	100	1453	1.00	2215.34	2214	8	2.77E-02	66.8	
37	0	1159.38	83	853	1.86	2303.92	2300	7	2.31E-02	59.2	
38	0	1173.21*	37348	2431	2.05	2331.42	2322	19	1.04E+01	0.6	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1211.27*	62	505	1.68	2407.11	2404	8	1.71E-02	64.8	
40	0	1231.58	56	379	1.70	2447.51	2443	8	1.55E-02	61.9	
41	0	1270.20*	58	314	1.44	2524.31	2521	7	1.61E-02	52.5	
42	0	1318.08	74	341	1.18	2619.56	2616	7	2.05E-02	43.2	
43	5	1325.67	553	983	3.54	2634.67	2623	39	1.53E-01	15.9	1.07E+01
44	5	1332.50*	33504	562	2.23	2648.24	2623	39	9.31E+00	0.6	
45	0	1404.12	36	236	0.59	2790.71	2786	7	9.97E-03	72.9	
46	0	1459.28*	57	523	4.35	2900.44	2894	13	1.59E-02	83.7	
47	0	1551.48*	99	367	2.36	3083.88	3080	8	2.74E-02	35.2	
48	0	1587.75	69	293	0.88	3156.03	3154	6	1.92E-02	40.9	
49	0	1596.97	25	299	0.56	3174.38	3171	6	6.88E-03	112.0	
50	0	1623.14	97	727	7.89	3226.45	3219	21	2.70E-02	70.1	
51	0	1674.93	69	343	5.02	3329.51	3323	14	1.91E-02	59.0	
52	0	1782.30	70	91	4.84	3543.16	3538	12	1.94E-02	29.7	
53	0	1797.31*	29	67	1.63	3573.03	3570	7	8.06E-03	50.3	
54	0	1836.11*	11797	362	2.41	3650.25	3638	24	3.28E+00	1.0	
55	0	1952.53	23	75	4.63	3881.96	3877	15	6.39E-03	84.7	
56	0	2013.87	20	16	1.46	4004.04	4002	5	5.47E-03	39.2	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*********************************************************************
*                          General Eng. Labs, LLC.                  *
*                              2040 Savage Road                     *
*                            Charleston, SC 29414                   *
*********************************************************************
*                                                                   *
*                             DETECTOR DATA                         *
*                                                                   *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_WELL_CAN *
* Acquisition date : 14-DEC-2005 17:17:48 Detector SN#    : 3941466  *
* Detector ID      : WELL                 Sensitivity     : 3.000    *
* Geometry         : CAN                  Energy tolerance: 2.000    *
* Elapsed live time:    0 01:00:00.00     Abundance limit : 75.000   *
* Elapsed real time:    0 01:01:15.52     Half life ratio :  8.000   *
*********************************************************************
*                                                                   *
*                             SAMPLE DATA                           *
*                                                                   *
* Sample date      :  1-APR-2005 12:00:00 Nuclide Library : FERMC    *
* Sample ID        : VER_WELL_CAN         Analyst initials: MJH1     *
* Batch Number     :                      Sample Quantity : 1.0000E+00 LITER *
* Recovery         :    1.00000           Carrier Weight :    0.00000 *
*********************************************************************
*                                                                   *
*                               QC DATA                             *
* Standard Weight  :   0.00000                                      *
* CALIB. DATE/TIME : 14-DEC-2005 17:16:53 MS Isotope      :         *
* MSD DPM          : ********            MSD Isotope     :         *
* LCS DPM          :    0.000           LCS Isotope     :         *
* LCSD DPM         :    0.000           LCSD Isotope    :         *
*********************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	
CO-57	1.950E+04	2.638E+02	1.533E+02	0.000E+00
CO-60	3.810E+04	4.318E+02	1.279E+02	0.000E+00
Y-88	8.701E+04	1.765E+03	4.402E+02	0.000E+00
CD-109	8.102E+05	6.444E+03	3.601E+03	0.000E+00
SN-113	4.723E+04	1.154E+03	7.098E+02	0.000E+00
CS-137	2.487E+04	3.480E+02	1.676E+02	0.000E+00
CE-139	2.851E+04	4.485E+02	2.896E+02	0.000E+00
HG-203	5.713E+04	4.795E+03	4.579E+03	0.000E+00
PB-210	7.865E+05	6.259E+03	5.155E+03	0.000E+00
AM-241	6.213E+04	6.487E+02	3.775E+02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/LITER)	K.L. Act error Ided	MDA (pCi/LITER)

VAX/VMS Nuclide Identification Report Generated 14-DEC-2005 18:19:31.36

```
**********************************************************************
*                          GENERAL ENG. LABS, LLC.                   *
*                              2040 Savage Road                      *
*                            Charleston, SC 29414                    *
**********************************************************************
Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_WELL_CAN.CNF;1
Sample date       : 1-APR-2005 12:00:00. Acquisition date : 14-DEC-2005 17:17:48
Sample ID         : VER_WELL_CAN         Sample quantity  : 1.00000E+00 LITER
Detector name     : WELL                 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00         Elapsed real time: 0 01:01:15.52  2.1%
Energy tolerance : 2.00000 KEV           Analyst Initials : MJH1
Abundance limit   : 75.00000            Sensitivity      : 3.00000
Batch ID          :                      Detector SN#     : 3941466
Matrix Spike DPM :                       LCS DPM          :
**********************************************************************
```

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/LITER	Decay Corr pCi/LITER	2-Sigma %Error
CO-57	122.06	58293	85.51*	5.059E+00	1.012E+04	1.950E+04	1.35
	136.47	7151	10.47	4.895E+00	1.048E+04	2.019E+04	6.22
CO-60	1173.24	37348	99.90	8.068E-01	3.479E+04	3.817E+04	1.21
	1332.50	33504	99.98*	7.245E-01	3.473E+04	3.810E+04	1.13
Y-88	898.04	20561	93.40	1.013E+00	1.631E+04	8.683E+04	2.03
	1836.06	11797	99.38*	5.453E-01	1.634E+04	8.701E+04	2.03
CD-109	88.03	140788	3.79*	5.066E+00	5.505E+05	8.102E+05	0.80
SN-113	391.70	19069	64.90*	2.199E+00	1.003E+04	4.723E+04	2.44
CS-137	661.66	36964	85.12*	1.332E+00	2.447E+04	2.487E+04	1.40
CE-139	165.85	37327	80.35*	4.469E+00	7.804E+03	2.851E+04	1.57
HG-203	70.83	3337	4.75	4.551E+00	1.159E+04	5.318E+05	30.16
	72.87	1748	8.00	4.705E+00	3.486E+03	1.600E+05	42.47
	82.60	------	3.55	4.973E+00	------ Line Not Found		------
	279.20	3871	77.30*	3.020E+00	1.245E+03	5.713E+04	8.39
PB-210	46.50	126212	4.05*	3.041E+00	7.695E+05	7.865E+05	0.80
AM-241	59.54	120117	35.90*	4.048E+00	6.206E+04	6.213E+04	1.04

Flag: "*" = Keyline

Sample ID : VER_WELL_CAN
Acquisition date : 14-DEC-2005 17:17:48

Total number of lines in spectrum	56	
Number of unidentified lines	41	
Number of lines tentatively identified by NID	15	26.79%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/LITER	Decay Corr pCi/LITER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	1.93	1.012E+04	1.950E+04	0.026E+04	1.35	
CO-60	5.27Y	1.10	3.473E+04	3.810E+04	0.043E+04	1.13	
Y-88	106.63D	5.32	1.634E+04	8.701E+04	0.177E+04	2.03	
CD-109	461.40D	1.47	5.505E+05	8.102E+05	0.064E+05	0.80	
SN-113	115.09D	4.71	1.003E+04	4.723E+04	0.115E+04	2.44	
CS-137	30.00Y	1.02	2.447E+04	2.487E+04	0.035E+04	1.40	
CE-139	137.64D	3.65	7.804E+03	2.851E+04	0.045E+04	1.57	
HG-203	46.60D	45.9	1.245E+03	5.713E+04	0.480E+04	8.39	
PB-210	22.26Y	1.02	7.695E+05	7.865E+05	0.063E+05	0.80	
AM-241	432.20Y	1.00	6.206E+04	6.213E+04	0.065E+04	1.04	
			---------	---------			
	Total Activity :		1.487E+06	1.961E+06			

Grand Total Activity :	1.487E+06	1.961E+06	

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Sample ID : VER_WELL_CAN
Acquisition date : 14-DEC-2005 17:17:48

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	32.94	8090	42222	1.45	64.85	62	8	2.25E+00	9.1	1.66E+00	
1	36.16	2099	10359	1.36	71.25	70	27	5.83E-01	12.2	2.00E+00	
1	40.19	6404	41044	1.37	79.25	70	27	1.78E+00	11.5	2.42E+00	
1	42.20	7325	40817	1.38	83.25	70	27	2.03E+00	10.2	2.63E+00	
10	66.54	2603	25638	2.05	131.60	126	25	7.23E-01	24.1	4.44E+00	
0	156.62	194	6859	1.39	310.56	308	7	5.40E-02	****	4.61E+00	
0	199.37	534	6782	1.82	395.51	391	9	1.48E-01	56.4	3.97E+00	
0	255.10	777	6322	1.42	506.25	502	10	2.16E-01	39.0	3.27E+00	
0	309.70	233	4389	1.90	614.75	612	9	6.48E-02	****	2.75E+00	
0	511.27	337	3672	1.31	1015.34	1011	11	9.37E-02	70.9	1.70E+00	
0	530.86	155	1686	1.02	1054.28	1052	6	4.31E-02	85.3	1.64E+00	
0	573.83	91	1923	1.59	1139.69	1137	7	2.54E-02	****	1.52E+00	
0	610.33	24	1687	0.73	1212.23	1211	6	6.56E-03	****	1.44E+00	
0	625.88	102	2504	1.45	1243.14	1239	9	2.84E-02	****	1.40E+00	
0	629.80	139	1633	1.14	1250.94	1248	6	3.87E-02	93.4	1.39E+00	
0	690.27	124	2402	2.16	1371.14	1367	9	3.45E-02	****	1.28E+00	
0	744.04	100	1822	1.25	1478.03	1476	8	2.78E-02	****	1.20E+00	
0	777.53	126	1713	1.47	1544.61	1541	8	3.50E-02	****	1.15E+00	
0	803.35	96	1015	0.93	1595.95	1594	5	2.67E-02	****	1.12E+00	
0	814.14	429	2506	1.60	1617.41	1612	11	1.19E-01	46.3	1.10E+00	
0	849.87	77	1407	1.21	1688.44	1685	6	2.15E-02	****	1.06E+00	
0	875.35	98	1489	1.21	1739.10	1736	6	2.71E-02	****	1.04E+00	
0	1069.73	33	2166	3.43	2125.61	2118	11	9.17E-03	****	8.72E-01	
0	1114.84	100	1453	1.00	2215.34	2214	8	2.77E-02	****	8.42E-01	
0	1159.38	83	853	1.86	2303.92	2300	7	2.31E-02	****	8.15E-01	
0	1211.27	62	505	1.68	2407.11	2404	8	1.71E-02	****	7.85E-01	
0	1231.58	56	379	1.70	2447.51	2443	8	1.55E-02	****	7.74E-01	
0	1270.20	58	314	1.44	2524.31	2521	7	1.61E-02	****	7.54E-01	
0	1318.08	74	341	1.18	2619.56	2616	7	2.05E-02	86.4	7.31E-01	
5	1325.67	553	983	3.54	2634.67	2623	39	1.53E-01	31.7	7.28E-01	
0	1404.12	36	236	0.59	2790.71	2786	7	9.97E-03	****	6.93E-01	
0	1459.28	57	523	4.35	2900.44	2894	13	1.59E-02	****	6.70E-01	
0	1551.48	99	367	2.36	3083.88	3080	8	2.74E-02	70.5	6.36E-01	
0	1587.75	69	293	0.88	3156.03	3154	6	1.92E-02	81.8	6.23E-01	
0	1596.97	25	299	0.56	3174.38	3171	6	6.88E-03	****	6.20E-01	
0	1623.14	97	727	7.89	3226.45	3219	21	2.70E-02	****	6.11E-01	
0	1674.93	69	343	5.02	3329.51	3323	14	1.91E-02	****	5.94E-01	
0	1782.30	70	91	4.84	3543.16	3538	12	1.94E-02	59.3	5.61E-01	
0	1797.31	29	67	1.63	3573.03	3570	7	8.06E-03	****	5.56E-01	
0	1952.53	23	75	4.63	3881.96	3877	15	6.39E-03	****	5.14E-01	
0	2013.87	20	16	1.46	4004.04	4002	5	5.47E-03	78.3	4.98E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 14-DEC-2005 18:19:32.72

```
*****************************************************************************
*                          GENERAL ENG. LABS, LLC.                          *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_WELL_CAN.CNF;1   *
* Acquisition date : 14-DEC-2005 17:17:48  Detector SN#     : 3941466       *
* Detector ID      : WELL                  Sensitivity      : 3.00000       *
* Geometry         : CAN                   Energy tolerance: 2.00000       *
* Elapsed live time: 0 01:00:00.00         Abundance limit  : 75.00000      *
* Elapsed real time: 0 01:01:15.52         Half life ratio  : 8.00000       *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date      : 1-APR-2005 12:00:00.  Nuclide Library : CAL             *
* Sample ID        : VER_WELL_CAN          Analyst initials: MJH1            *
* Batch Number     :                       Sample Quantity : 1.00000E+00 LITER *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
*                                                                           *
* CALIB. DATE/TIME : 14-DEC-2005 17:16:53.5MS Isotope      :                *
* MSD DPM          :                       MSD Isotope     :                *
* LCS DPM          :                       LCS Isotope     :                *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	MDA error	Act/MDA
CO-57	1.950E+04	2.638E+02	1.533E+02	0.000E+00	127.159
CO-60	3.810E+04	4.318E+02	1.279E+02	0.000E+00	297.796
Y-88	8.701E+04	1.765E+03	4.402E+02	0.000E+00	197.670
CD-109	8.102E+05	6.444E+03	3.601E+03	0.000E+00	225.016
SN-113	4.723E+04	1.154E+03	7.098E+02	0.000E+00	66.545
CS-137	2.487E+04	3.480E+02	1.676E+02	0.000E+00	148.422
CE-139	2.851E+04	4.485E+02	2.896E+02	0.000E+00	98.418
HG-203	5.713E+04	4.795E+03	4.579E+03	0.000E+00	12.478
PB-210	7.865E+05	6.259E+03	5.155E+03	0.000E+00	152.566
AM-241	6.213E+04	6.487E+02	3.775E+02	0.000E+00	164.571

VAX/VMS Nuclide Identification Report Generated 14-DEC-2005 16:11:43.64

****
*
*
*
****

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]CAL_WELL_CAN.CNF;1
Sample date : 1-APR-2005 12:00:00. Acquisition date : 14-DEC-2005 15:09:59
Sample ID : CAL_WELL_CAN Sample quantity : 1.00000E+00 LITER
Detector name : WELL Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:01:15.78 2.1%
Energy tolerance : 2.00000 KEV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 3941466
Matrix Spike DPM : LCS DPM :

****

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	33.01	8246	41954	1.55	64.99	62	8	2.29E+00	4.4	
2	9	37.37*	5883	36050	2.91	73.65	70	27	1.63E+00	5.5	1.30E+02
3	9	41.25	15566	86773	2.94	81.36	70	27	4.32E+00	4.5	
4	9	44.00	10962	50654	1.67	86.83	70	27	3.05E+00	4.5	
5	9	46.52*	132120	44971	1.47	91.82	70	27	3.67E+01	0.4	
6	0	59.51	118513	53096	1.29	117.63	111	14	3.29E+01	0.5	
7	7	67.04	4333	33444	2.54	132.59	126	24	1.20E+00	9.1	4.66E+00
8	7	69.77	2487	29794	1.88	138.02	126	24	6.91E-01	13.9	
9	7	72.94*	2226	31922	2.19	144.32	126	24	6.18E-01	15.4	
10	0	88.06*	142647	39189	1.32	174.36	167	15	3.96E+01	0.4	
11	0	103.33	253	10867	1.47	204.69	202	7	7.02E-02	68.7	
12	0	122.12	58815	21574	1.37	242.03	234	16	1.63E+01	0.7	
13	0	136.54	7058	11508	1.38	270.68	266	11	1.96E+00	3.2	
14	0	165.94*	36981	11897	1.38	329.08	323	13	1.03E+01	0.8	
15	0	199.10*	273	5487	1.45	394.97	391	7	7.57E-02	45.5	
16	0	203.75	121	3853	0.74	404.22	402	5	3.37E-02	77.2	
17	0	255.24	878	5574	1.13	506.53	503	9	2.44E-01	15.7	
18	0	279.32*	3554	6174	1.41	554.37	550	11	9.87E-01	4.6	
19	0	391.76*	19250	6457	1.54	777.83	770	15	5.35E+00	1.2	
20	0	469.11	39	3000	0.75	931.54	931	7	1.09E-02	231.8	
21	0	661.69*	37044	5332	1.73	1314.32	1306	17	1.03E+01	0.7	
22	0	697.49	92	1645	1.36	1385.50	1382	6	2.55E-02	70.7	
23	0	793.28	125	1522	1.53	1575.92	1573	7	3.48E-02	52.5	
24	0	814.01*	391	2512	1.47	1617.14	1612	11	1.09E-01	25.3	
25	0	898.05*	20363	4638	1.87	1784.24	1776	17	5.66E+00	1.0	
26	0	1012.14	108	1801	1.97	2011.10	2007	9	3.00E-02	71.7	
27	0	1046.13	88	1097	1.49	2078.69	2077	6	2.43E-02	60.9	
28	0	1173.25*	37789	2386	2.03	2331.50	2321	20	1.05E+01	0.6	
29	0	1238.14	35	440	1.28	2460.56	2457	8	9.59E-03	106.6	
30	5	1325.67	516	1196	3.54	2634.67	2621	42	1.43E-01	17.6	6.82E+00
31	5	1332.53*	33702	632	2.21	2648.30	2621	42	9.36E+00	0.6	
32	0	1430.30	32	536	4.84	2842.79	2836	13	8.76E-03	152.5	
33	0	1485.64*	66	309	1.43	2952.89	2949	8	1.84E-02	47.8	
34	0	1753.86	21	208	5.28	3486.57	3479	16	5.83E-03	155.1	
35	0	1836.17*	11671	397	2.41	3650.38	3639	24	3.24E+00	1.0	
36	0	1886.85	12	29	1.42	3751.23	3748	6	3.31E-03	77.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Calibration Report V1.5 Generated 14-DEC-2005 17:16:53

Configuration : MCA0:[GAMMA]WELL$1
Analyses by : CALIBRATE V1.7,PEAK V16.4
Detector Name : WELL Energy Calib Time: 13-DEC-2005 09:34:01
Efficiency type : Empirical Effncy Calib Time: 14-DEC-2005 17:16:53
Detector Geometry: WELL Shelf : 0

Energy Calibration Report

Energy = 0.2987 + 0.5034*Channel + -1.2315E-07*(Channel**2)

Nbr	Centroid Channel	True Energy	Computed Energy	Difference
1	91.73	46.50	46.47	0.026
2	117.44	59.54	59.42	0.121
3	174.31	88.03	88.04	-0.006
4	242.00	122.06	122.11	-0.050
5	329.06	165.85	165.93	-0.073
6	777.81	391.70	391.76	-0.055
7	1314.30	661.66	661.67	-0.014
8	1784.19	898.04	898.03	0.016
9	2331.37	1173.24	1173.19	0.051
10	2648.23	1332.50	1332.49	0.008
11	3650.20	1836.06	1836.09	-0.024

FWHM Calibration Report

FWHM = 1.046 + 3.1639E-02*(Energy**1/2)

Nbr	Energy	True FWHM	Computed FWHM	Difference
1	46.50	1.48	1.26	0.215
2	59.54	1.33	1.29	0.036
3	88.03	1.33	1.34	-0.010
4	122.06	1.37	1.40	-0.028
5	165.85	1.39	1.45	-0.064
6	391.70	1.52	1.67	-0.148
7	661.66	1.76	1.86	-0.102
8	898.04	1.92	1.99	-0.075
9	1173.24	2.09	2.13	-0.043
10	1332.50	2.30	2.20	0.094
11	1836.06	2.53	2.40	0.124

Efficiency Calibration Report

Eff = exp(a2 + a3*x + a4*x**2 + a5*x**3 + a6*x**4 + a7*x**5), x=ln(a1/energy)

a1	a2	a3	a4	a5	a6	a7
941.3	-4.633	0.8619	7.0681E-02	6.4484E-02	-7.1717E-02	8.2159E-03

Average Deviation = 1.46 % Reduced Chi-Square = 0.771

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff

1	46.50	3.06E-02	9.28E-04	3.04E-02	0.27	0.82

Sample ID : CAL_WELL_CAN Acquisition date : 14-DEC-2005 15:09:59

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff
2	59.54	3.98E-02	1.21E-03	4.05E-02	-0.56	-1.71
3	88.03	5.05E-02	1.68E-03	5.07E-02	-0.08	-0.25
4	122.06	5.24E-02	1.61E-03	5.06E-02	1.11	3.41
5	165.85	4.37E-02	1.27E-03	4.47E-02	-0.75	-2.18
6	391.70	2.18E-02	6.20E-04	2.20E-02	-0.36	-1.01
7	661.66	1.37E-02	4.22E-04	1.33E-02	0.95	2.93
8	898.04	9.96E-03	2.79E-04	1.01E-02	-0.61	-1.70
9	1173.24	8.14E-03	2.25E-04	8.07E-03	0.32	0.88
10	1332.50	7.18E-03	1.91E-04	7.24E-03	-0.33	-0.87
11	1836.06	5.47E-03	1.53E-04	5.45E-03	0.11	0.30

Approved by: _____ Approval Date: 12 / 15 / 05

12/18/05

Print Time : 14-JUN-2005 17:43:24.41
Certificate file name : DKA300:[CANBERRA.GAMMA]70530-278.CER;1
Certificate title : CAN
Certificate date : 1-APR-2005 12:00:00.00
Certificate quantity : 1.00000E+00

Rcd	Nuclide	Halflife	CAL/ INIT	Energy	Rate	%Abun	Activity (uCi)
1	AM-241	432.20Y	Yes	59.54	8.2730E+02	35.90	6.2283E-02
2	CD-109	462.60D	No	88.03	1.1530E+03	3.79	8.2222E-01
3	Co-57	271.79D	No	122.06	6.0100E+02	85.51	1.8996E-02
4	CE-139	137.60D	No	165.85	8.5780E+02	80.35	2.8853E-02
5	SN-113	115.10D	No	391.70	1.1560E+03	64.90	4.8141E-02
6	CS-137	30.07Y	Yes	661.66	7.6270E+02	85.12	2.4217E-02
7	Y-88	106.60D	No	898.04	3.0220E+03	93.40	8.7447E-02
8	Y-88	106.60D	Yes	1836.06	3.1560E+03	99.38	8.5829E-02
9	Co-60	5.27Y	Yes	1173.24	1.4150E+03	99.90	3.8282E-02
10	CO-60	5.27Y	No	1332.50	1.4300E+03	99.98	3.8655E-02
11	PB-210	22.30Y	No	46.50	1.2240E+03	4.05	8.1682E-01

Library Title :
Library file name : DKA300:[CANBERRA.GAMMA]CAL.NLB;1
Date printed : 6-DEC-2004 10:31:17.67
Number of nuclides : 10
Number of lines : 17

Nuclide Name	Half-Life	Nuclide Type	Key Line	Energy		Abundance
CO-57	271.74D		*	122.06	keV	85.51 %
				136.47	keV	10.47 %
CO-60	5.27Y			1173.24	keV	99.90 %
			*	1332.50	keV	99.98 %
Y-88	106.63D			898.04	keV	93.40 %
			*	1836.06	keV	99.38 %
CD-109	461.40D		*	88.03	keV	3.79 %
SN-113	115.09D		*	391.70	keV	64.90 %
CS-137	30.00Y		*	661.66	keV	85.12 %
CE-139	137.64D		*	165.85	keV	80.35 %
HG-203	46.60D			70.83	keV	4.75 %
				72.87	keV	8.00 %
				82.60	keV	3.55 %
			*	279.20	keV	77.30 %
PB-210	22.26Y		*	46.50	keV	4.05 %
AM-241	432.20Y		*	59.54	keV	35.90 %

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 • U.S.A.

Phone (404) 352-8677
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CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

70530-278

100 mL Solid in 100 mL Aluminum Can

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 and Pb-210 were calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in US NRC Regulatory Guide 4.15, Revision 1, February 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776.
Density of solid matrix 1.15 g/cc.

Calibration Date: April 1, 2005 12:00 EST

ISOTOPE	GAMMA ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Pb-210	46.5	22.3	y	1224	3.0
Am-241	59.5	432.2	y	827.3	3.0
Cd-109	88	462.6	d	1153	3.3
Co-57	122	271.79	d	601.0	3.0
Ce-139	166	137.6	d	857.8	2.8
Hg-203	279	46.61	d	1856	2.7
Sn-113	392	115.1	d	1156	2.6
Cs-137	662	30.07	y	762.7	3.0
Y-88	898	106.6	d	3022	2.6
Co-60	1173	5.271	y	1415	2.7
Co-60	1332	5.271	y	1430	2.6
Y-88	1836	106.6	d	3156	2.6

P O NUMBER 2832RD, Item 3

SOURCE PREPARED BY: M. Dimitrova

M. Dimitrova, Radiochemist

Q A APPROVED: M. [illegible] 5-12-05

This standard will expire one year after the calibration date.

CONTINUING CALIBRATION DATA

Gas Flow Proportional Counter Checks for 11-APR-2006

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LB4100A1	ALPHA BKG	09:25	60	4.00	0.07	0.26	GOOD	
	BETA BKG	09:25	60	62.0	1.03	0.7	GOOD	
	ALPHA EFF	10:39	30	23668	789	-0.02	GOOD	
	BETA EFF	10:39	30	1.79E+05	5960	0.84	GOOD	
LB4100A2	ALPHA BKG	09:25	60	4.00	0.07	-0.07	GOOD	
	BETA BKG	09:25	60	55.0	0.92	0.4	GOOD	
	ALPHA EFF	10:39	30	15940	531	-0.37	GOOD	
	BETA EFF	10:39	30	1.31E+05	4370	0.94	GOOD	
LB4100A3	ALPHA BKG	09:25	60	6.00	0.1	0.06	GOOD	
	BETA BKG	09:25	60	58.0	0.97	0.09	GOOD	
	ALPHA EFF	10:39	30	21899	730	-0.65	GOOD	
	BETA EFF	10:39	30	1.58E+05	5260	0.41	GOOD	
LB4100A4	ALPHA BKG	09:25	60	2.00	0.03	-0.41	GOOD	
	BETA BKG	09:25	60	77.0	1.28	0.99	GOOD	
	ALPHA EFF	10:39	30	18681	623	-3	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	10:39	30	1.72E+05	5740	1.54	GOOD	
LB4100B1	ALPHA BKG	09:25	60	4.00	0.07	0.88	GOOD	
	BETA BKG	09:25	60	49.0	0.82	-0.48	GOOD	
	ALPHA EFF	10:41	30	21351	712	0.26	GOOD	
	BETA EFF	10:41	30	1.88E+05	6280	0.48	GOOD	
LB4100B2	ALPHA BKG	09:25	60	1.00	0.02	-0.74	GOOD	
	BETA BKG	09:25	60	51.0	0.85	-0.18	GOOD	
	ALPHA EFF	10:41	30	20966	699	-0.02	GOOD	
	BETA EFF	10:41	30	1.64E+05	5470	0.15	GOOD	
LB4100B3	ALPHA BKG	09:25	60	1.00	0.02	-0.85	GOOD	
	BETA BKG	09:25	60	82.0	1.37	1.13	GOOD	
	ALPHA EFF	10:41	30	15841	528	-0.02	GOOD	
	BETA EFF	10:41	30	1.24E+05	4140	1.28	GOOD	
LB4100B4	ALPHA BKG	09:25	60	0	0	-1.3	GOOD	
	BETA BKG	09:25	60	249	4.15	30.7	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	10:41	30	18179	606	-1.2	GOOD	
	BETA EFF	10:41	30	1.56E+05	5190	1.09	GOOD	
LB4100C1	ALPHA BKG	09:25	60	11.0	0.18	-0.96	GOOD	
	BETA BKG	09:25	60	59.0	0.98	-1	GOOD	
	ALPHA EFF	10:39	30	21686	723	0.58	GOOD	
	BETA EFF	10:39	30	1.36E+05	4540	0.68	GOOD	
LB4100C2	ALPHA BKG	09:25	60	4.00	0.07	-0.14	GOOD	
	BETA BKG	09:25	60	77.0	1.28	2.81	GOOD	
	ALPHA EFF	10:39	30	21828	728	0.59	GOOD	
	BETA EFF	10:39	30	1.97E+05	6570	1.9	GOOD	
LB4100C3	ALPHA BKG	09:25	60	3.00	0.05	-0.24	GOOD	
	BETA BKG	09:25	60	63.0	1.05	1.47	GOOD	

— = αonly lockout

= = αB lockout

	ALPHA EFF	10:39	30	16875	563	0.43	GOOD	
	BETA EFF	10:39	30	1.36E+05	4530	0.51	GOOD	
LB4100C4	ALPHA BKG	09:25	60	1.00	0.02	-1.2	GOOD	
	BETA BKG	09:25	60	63.0	1.05	1.32	GOOD	
	ALPHA EFF	10:39	30	24684	823	0.74	GOOD	
	BETA EFF	10:39	30	2.21E+05	7370	0.86	GOOD	
LB4100D1	ALPHA BKG	09:25	60	19.0	0.32	5.09	DETL	Outside 2 sigma for >= 2 days
	BETA BKG	09:25	60	68.0	1.13	2.11	GOOD	
	ALPHA EFF	10:41	30	26230	874	-0.76	GOOD	
	BETA EFF	10:41	30	2.40E+05	8010	0.52	GOOD	
LB4100D2	ALPHA BKG	09:25	60	7.00	0.12	-0.48	GOOD	
	BETA BKG	09:25	60	58.0	0.97	-0.2	GOOD	
	ALPHA EFF	10:41	30	18913	630	-1.1	GOOD	
	BETA EFF	10:41	30	1.49E+05	4980	-0.11	GOOD	
LB4100D3	ALPHA BKG	09:25	60	1.00	0.02	-0.76	GOOD	
	BETA BKG	09:25	60	56.0	0.93	1.34	GOOD	
	ALPHA EFF	10:41	30	18019	601	-1.2	GOOD	
	BETA EFF	10:41	30	1.50E+05	4980	0.77	GOOD	
LB4100D4	ALPHA BKG	09:25	60	4.00	0.07	-0.2	GOOD	
	BETA BKG	09:25	60	46.0	0.77	-0.82	GOOD	
	ALPHA EFF	10:41	30	20682	689	-1.1	GOOD	
	BETA EFF	10:41	30	1.84E+05	6140	1.17	GOOD	
LB4100E1	ALPHA BKG	09:30	60	8.00	0.13	-0.89	GOOD	
	BETA BKG	09:30	60	62.0	1.03	-1.9	GOOD	
	ALPHA EFF	10:05	30	32848	1090	-1	GOOD	
	BETA EFF	10:05	30	2.13E+05	7110	0.54	GOOD	
LB4100E2	ALPHA BKG	09:30	60	8.00	0.13	0.13	GOOD	
	BETA BKG	09:30	60	112	1.87	0.68	GOOD	
	ALPHA EFF	10:05	30	34576	1150	-0.49	GOOD	
	BETA EFF	10:05	30	2.93E+05	9760	1.04	GOOD	
LB4100E3	ALPHA BKG	09:30	60	0	0	-2	GOOD	
	BETA BKG	09:30	60	64.0	1.07	-00	GOOD	
	ALPHA EFF	10:05	30	35034	1170	-0.72	GOOD	
	BETA EFF	10:05	30	2.28E+05	7600	-0.69	GOOD	
LB4100E4	ALPHA BKG	09:30	60	6.00	0.1	-0.52	GOOD	
	BETA BKG	09:30	60	98.0	1.63	-1.1	GOOD	
	ALPHA EFF	10:05	30	30537	1020	-0.06	DETL	Outside 3 sigma for > 2 days
	BETA EFF	10:05	30	2.27E+05	7580	0.48	GOOD	
LB4100F1	ALPHA BKG	09:30	60	8.00	0.13	1.53	GOOD	
	BETA BKG	09:30	60	69.0	1.15	1.73	GOOD	
	ALPHA EFF	10:05	30	29090	970	0.71	GOOD	
	BETA EFF	10:05	30	2.08E+05	6920	1.19	GOOD	
LB4100F2	ALPHA BKG	09:30	60	0	0	-2.3	GOOD	
	BETA BKG	09:30	60	60.0	1	-0.75	GOOD	
	ALPHA EFF	10:05	30	28030	934	2.53	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	10:05	30	2.21E+05	7350	-0.04	GOOD	
LB4100F3	ALPHA BKG	09:30	60	4.00	0.07	-1.5	GOOD	

Not a lockout condition
NW 4/11/06

	BETA BKG	09:30	60	90.0	1.5	0.8	GOOD	
	ALPHA EFF	10:05	30	28519	951	1.74	GOOD	
	BETA EFF	10:05	30	2.62E+05	8720	1.32	GOOD	
LB4100F4	ALPHA BKG	09:30	60	3.00	0.05	0.19	GOOD	
	BETA BKG	09:30	60	50.0	0.83	-0.21	GOOD	
	ALPHA EFF	10:05	30	24863	829	-1.6	GOOD	
	BETA EFF	10:05	30	2.03E+05	6760	1.46	GOOD	
LB4100G1	ALPHA BKG	09:30	60	6.00	0.1	-1	GOOD	
	BETA BKG	09:30	60	105	1.75	2.27	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	10:05	30	31778	1060	0.44	GOOD	
	BETA EFF	10:05	30	2.23E+05	7430	0.35	GOOD	
LB4100G2	ALPHA BKG	09:30	60	2.00	0.03	-0.79	GOOD	
	BETA BKG	09:30	60	90.0	1.5	6.44	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	10:05	30	31357	1050	-0.43	GOOD	
	BETA EFF	10:05	30	2.86E+05	9520	0.32	GOOD	
LB4100G3	ALPHA BKG	09:30	60	13.0	0.22	0.16	GOOD	
	BETA BKG	09:30	60	55.0	0.92	-0.61	GOOD	
	ALPHA EFF	10:05	30	22358	745	-0.36	GOOD	
	BETA EFF	10:05	30	2.46E+05	8190	-0.16	GOOD	
LB4100G4	ALPHA BKG	09:30	60	4.00	0.07	0.31	GOOD	
	BETA BKG	09:30	60	66.0	1.1	0.93	GOOD	
	ALPHA EFF	10:05	30	15152	505	-0.31	GOOD	
	BETA EFF	10:05	30	1.51E+05	5030	-0.02	GOOD	
LB4100H1	ALPHA BKG	09:30	60	4.00	0.07	-0.59	GOOD	
	BETA BKG	09:30	60	44.0	0.73	0.21	GOOD	
	ALPHA EFF	10:05	30	28760	959	-1.2	GOOD	
	BETA EFF	10:05	30	1.42E+05	4740	-0.21	GOOD	
LB4100H2	ALPHA BKG	09:30	60	3.00	0.05	-0.46	GOOD	
	BETA BKG	09:30	60	43.0	0.72	-1.3	GOOD	
	ALPHA EFF	10:05	30	18087	603	-0.59	GOOD	
	BETA EFF	10:05	30	1.52E+05	5070	1.33	GOOD	
LB4100H3	ALPHA BKG	09:30	60	4.00	0.07	-0.98	GOOD	
	BETA BKG	09:30	60	54.0	0.9	0.69	GOOD	
	ALPHA EFF	10:05	30	18913	630	-0.42	GOOD	
	BETA EFF	10:05	30	1.55E+05	5150	0.57	GOOD	
LB4100H4	ALPHA BKG	09:30	60	2.00	0.03	-1.1	GOOD	
	BETA BKG	09:30	60	43.0	0.72	-0.55	GOOD	
	ALPHA EFF	10:05	30	18221	607	-0.61	GOOD	
	BETA EFF	10:05	30	1.23E+05	4090	-0.1	GOOD	
PIC1A	ALPHA BKG	09:10	60	5.00	0.08	-1.1	GOOD	
	BETA BKG	09:10	60	24.0	0.4	-0.83	GOOD	
	ALPHA EFF	09:45	30	9686	323	-1.3	GOOD	
	BETA EFF	09:45	30	1.96E+05	6540	0.49	GOOD	
PIC1B	ALPHA BKG	09:10	60	2.00	0.03	-1.4	GOOD	
	BETA BKG	09:10	60	18.0	0.3	-0.65	GOOD	
	ALPHA EFF	09:45	30	10921	364	-1.8	GOOD	
	BETA EFF	09:45	30	2.15E+05	7160	1.11	GOOD	

PIC1C	ALPHA BKG	09:10	60	3.00	0.05	-0.89	GOOD	
	BETA BKG	09:10	60	26.0	0.43	0.27	GOOD	
	ALPHA EFF	09:45	30	15931	531	-0.05	GOOD	
	BETA EFF	09:45	30	2.45E+05	8181	0.46	GOOD	
PIC1D	ALPHA BKG	09:10	60	8.00	0.13	-0.31	GOOD	
	BETA BKG	09:10	60	28.0	0.47	0.16	GOOD	
	ALPHA EFF	09:45	30	16373	546	-0.72	GOOD	
	BETA EFF	09:45	30	1.90E+05	6320	0.88	GOOD	
PIC2A	ALPHA BKG	09:10	60	1.00	0.02	-1.5	GOOD	
	BETA BKG	09:10	60	34.0	0.57	0.15	GOOD	
	ALPHA EFF	09:46	30	15911	530	-0.93	GOOD	
	BETA EFF	09:46	30	2.33E+05	7750	0.93	GOOD	
PIC2B	ALPHA BKG	09:10	60	4.00	0.07	-0.34	GOOD	
	BETA BKG	09:10	60	18.0	0.3	-0.43	GOOD	
	ALPHA EFF	09:46	30	13556	452	-1.9	GOOD	
	BETA EFF	09:46	30	2.30E+05	7680	1.9	GOOD	
PIC2C	ALPHA BKG	09:10	60	5.00	0.08	-0.69	GOOD	
	BETA BKG	09:10	60	18.0	0.3	-0.49	GOOD	
	ALPHA EFF	09:46	30	19165	639	-0.44	GOOD	
	BETA EFF	09:46	30	1.94E+05	6450	0.36	GOOD	
PIC2D	ALPHA BKG	09:11	60	4.00	0.07	-0.92	GOOD	
	BETA BKG	09:11	60	22.0	0.37	-0.29	GOOD	
	ALPHA EFF	09:46	30	17284	576	-0.89	GOOD	
	BETA EFF	09:46	30	2.26E+05	7540	2.84	GOOD	
PIC3A	ALPHA BKG	09:11	60	1.00	0.02	-2.3	DETL	Outside 2 sigma for >= 2 days
	BETA BKG	09:11	60	39.0	0.65	1.13	GOOD	
	ALPHA EFF	09:46	30	21810	727	-1.7	GOOD	
	BETA EFF	09:46	30	1.79E+05	5980	1.73	GOOD	
PIC3B	ALPHA BKG	09:11	60	6.00	0.1	-0.47	GOOD	
	BETA BKG	09:11	60	24.0	0.4	-0.31	GOOD	
	ALPHA EFF	09:46	30	20572	686	-1	GOOD	
	BETA EFF	09:46	30	1.98E+05	6600	1.75	GOOD	
PIC3C	ALPHA BKG	09:11	60	4.00	0.07	-0.95	GOOD	
	BETA BKG	09:11	60	30.0	0.5	0.71	GOOD	
	ALPHA EFF	09:46	30	17483	583	-1	GOOD	
	BETA EFF	09:46	30	2.13E+05	7110	1.69	GOOD	
PIC3D	ALPHA BKG	09:11	60	1.00	0.02	-2.3	DETL	Outside 2 sigma for >= 2 days
	BETA BKG	09:11	60	30.0	0.5	0.51	GOOD	
	ALPHA EFF	09:47	30	24878	829	-1.3	GOOD	
	BETA EFF	09:47	30	2.14E+05	7140	-0.28	GOOD	
PIC4A	ALPHA BKG	09:11	60	2.00	0.03	-1.5	GOOD	
	BETA BKG	09:11	60	25.0	0.42	-0.5	GOOD	
	ALPHA EFF	09:47	30	13139	438	-0.41	GOOD	
	BETA EFF	09:47	30	1.75E+05	5850	0.62	GOOD	
PIC4B	ALPHA BKG	09:11	60	9.00	0.15	1.03	GOOD	
	BETA BKG	09:11	60	15.0	0.25	-0.85	GOOD	
	ALPHA EFF	09:47	30	17864	595	-1.5	GOOD	

	BETA EFF	09:47	30	2.23E+05	7450	0.35	GOOD
PIC4C	ALPHA BKG	09:11	60	3.00	0.05	-1.4	GOOD
	BETA BKG	09:11	60	22.0	0.37	-0.45	GOOD
	ALPHA EFF	09:47	30	20402	680	-1.3	GOOD
	BETA EFF	09:47	30	2.03E+05	6780	2.15	GOOD
PIC4D	ALPHA BKG	09:12	60	4.00	0.07	-0.84	GOOD
	BETA BKG	09:12	60	26.0	0.43	-0.06	GOOD
	ALPHA EFF	09:47	30	20522	684	-1.3	GOOD
	BETA EFF	09:47	30	2.12E+05	7080	1.27	GOOD
PIC5A	ALPHA BKG	09:12	60	6.00	0.1	0.35	GOOD
	BETA BKG	09:12	60	27.0	0.45	0.11	GOOD
	ALPHA EFF	09:48	30	11380	379	-0.57	GOOD
	BETA EFF	09:48	30	4.00E+05	13300	-0.61	GOOD
PIC5B	ALPHA BKG	09:12	60	2.00	0.03	-0.99	GOOD
	BETA BKG	09:12	60	139	2.32	0.74	RERUN
	ALPHA EFF	09:48	30	10528	351	0.07	GOOD
	BETA EFF	09:48	30	3.51E+05	11700	0.11	GOOD
PIC5C	ALPHA BKG	09:12	60	5.00	0.08	1.59	GOOD
	BETA BKG	09:12	60	28.0	0.47	1.05	GOOD
	ALPHA EFF	09:48	30	10511	350	-0.27	GOOD
	BETA EFF	09:48	30	3.88E+05	12900	-1.4	GOOD
PIC5D	ALPHA BKG	09:12	60	1.00	0.02	-0.87	GOOD
	BETA BKG	09:12	60	22.0	0.37	0.42	GOOD
	ALPHA EFF	09:48	30	9019	301	-0.43	GOOD
	BETA EFF	09:48	30	3.10E+05	10300	-0.04	GOOD
PIC6A	ALPHA BKG	09:12	60	3.00	0.05	-0.18	GOOD
	BETA BKG	09:12	60	13.0	0.22	-1.4	GOOD
	ALPHA EFF	09:48	30	8048	268	-0.41	GOOD
	BETA EFF	09:48	30	2.81E+05	9370	-0.28	GOOD
PIC6B	ALPHA BKG	09:13	60	2.00	0.03	-0.4	GOOD
	BETA BKG	09:13	60	13.0	0.22	-0.77	GOOD
	ALPHA EFF	09:48	30	10357	345	-0.47	GOOD
	BETA EFF	09:48	30	2.89E+05	9640	-1.5	GOOD
PIC6C	ALPHA BKG	09:13	60	1.00	0.02	-0.93	GOOD
	BETA BKG	09:13	60	19.0	0.32	0.32	GOOD
	ALPHA EFF	09:48	30	14403	480	-0.64	GOOD
	BETA EFF	09:48	30	3.52E+05	11700	0.07	GOOD
PIC6D	ALPHA BKG	09:13	60	4.00	0.07	0.4	GOOD
	BETA BKG	09:13	60	13.0	0.22	-1	GOOD
	ALPHA EFF	09:49	30	11475	383	-0.21	GOOD
	BETA EFF	09:49	30	3.60E+05	12000	-0.47	GOOD
PIC7A	ALPHA BKG	09:13	60	5.00	0.08	-0.39	GOOD
	BETA BKG	09:13	60	28.0	0.47	-0.49	GOOD
	ALPHA EFF	09:49	30	10050	335	-0.27	GOOD
	BETA EFF	09:49	30	3.78E+05	12600	-1	GOOD
PIC7B	ALPHA BKG	09:13	60	20.0	0.33	-0.2	RERUN
	BETA BKG	09:13	60	25.0	0.42	-0.61	GOOD

	ALPHA EFF	09:49	30	10171	339	-0.65	GOOD	
	BETA EFF	09:49	30	3.18E+05	10600	-0.61	GOOD	
PIC7C	ALPHA BKG	09:13	60	6.00	0.1	-0.56	GOOD	
	BETA BKG	09:13	60	16.0	0.27	-01	GOOD	
	ALPHA EFF	09:49	30	11552	385	-0.42	GOOD	
	BETA EFF	09:49	30	3.80E+05	12700	-0.7	GOOD	
PIC7D	ALPHA BKG	09:13	60	6.00	0.1	-0.74	GOOD	
	BETA BKG	09:13	60	32.0	0.53	-0.35	GOOD	
	ALPHA EFF	09:49	30	8397	280	-0.3	GOOD	
	BETA EFF	09:49	30	2.83E+05	9430	-0.27	GOOD	
PIC8A	ALPHA BKG	09:14	60	4.00	0.07	-0.73	GOOD	
	BETA BKG	09:14	60	31.0	0.52	-0.72	GOOD	
	ALPHA EFF	09:49	30	13002	433	0	GOOD	
	BETA EFF	09:49	30	3.74E+05	12500	-0.21	GOOD	
PIC8B	ALPHA BKG	09:14	60	1.00	0.02	-0.75	GOOD	
	BETA BKG	09:14	60	48.0	0.8	-0.44	GOOD	
	ALPHA EFF	09:49	30	9656	322	-0.52	GOOD	
	BETA EFF	09:49	30	3.73E+05	12400	-0.02	GOOD	
PIC8C	ALPHA BKG	09:14	60	20.0	0.33	-0.25	RERUN	
	BETA BKG	09:14	60	25.0	0.42	-0.53	GOOD	
	ALPHA EFF	09:50	30	14748	492	-0.17	GOOD	
	BETA EFF	09:50	30	4.29E+05	14300	-0.16	GOOD	
PIC8D	ALPHA BKG	09:14	60	14.0	0.23	-0.29	GOOD	
	BETA BKG	09:14	60	88.0	1.47	-0.21	GOOD	
	ALPHA EFF	09:50	30	11083	369	1.58	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	09:50	30	3.72E+05	12400	0.17	GOOD	

Not a lockout condition
4/11/06

Reviewed by _____

Date 4/11/06

General Engineering Laboratories, LLC

Review of Alpha Spectrometer QA results (Daily checks) 7-APR-2006 01:04:41.32

Starting with bank 1
Ending with bank 19

	Detector	Parameter	Flag
7-APR-2006	2	PSFWHM-5000	Above
7-APR-2006	6	PSFWHM-5000	Below
7-APR-2006	6	PSENERGY-5000	Above
7-APR-2006	6	PSCENTRD-5000	Above
7-APR-2006	14	PSFWHM-5000	Below
7-APR-2006	14	PSENERGY-5000	Above
7-APR-2006	22	PSENERGY-5000	Above
7-APR-2006	24	PSFWHM-5000	Below
7-APR-2006	25	PSFWHM-5000	Below
7-APR-2006	25	PSCENTRD-5000	Below
7-APR-2006	39	PSENERGY-5000	Above
7-APR-2006	67	PSFWHM-5000	Above
7-APR-2006	68	PSFWHM-5000	Above
7-APR-2006	71	PSENERGY-5000	Above
7-APR-2006	74	PSENERGY-5000	Above
7-APR-2006	84	PSENERGY-5000	Above
7-APR-2006	97	PSENERGY-5000	Above
7-APR-2006	105	PSENERGY-5000	Above
7-APR-2006	106	PSFWHM-5000	Above
7-APR-2006	115	PSFWHM-5000	Above
7-APR-2006	131	PSFWHM-5000	Above

DETECTORS NOT LISTED HAVE PASSED ALL QUALITY ASSURANCE PARAMETERS

APPROVAL DATE: 4/7/06 APPROVAL TIME: 730

APPROVED BY: [signature] PROCEDURE # GL-RAD-I-009

Report completed at 7-APR-2006 01:09:37.42

Review of QA results (Daily checks) 7-APR-2006 01:09:40.11

Starting with bank 1
Ending with bank 19

This is a list of Detectors that may not have properly transfered to the QA file

APPROVAL DATE: 4/7/06 APPROVAL TIME: 730

APPROVED BY: [signature] PROCEDURE # GL-RAD-I-009

Report completed at 7-APR-2006 01:12:21.24

Review of Alpha Spectrometer QA results (Daily checks) 8-APR-2006 08:29:57.95

Starting with bank 1
Ending with bank 19

	Detector	Parameter	Flag
8-APR-2006	4	PSFWHM-5000	Above
8-APR-2006	6	PSFWHM-5000	Below
8-APR-2006	6	PSENERGY-5000	Above
8-APR-2006	6	PSCENTRD-5000	Above
8-APR-2006	12	PSFWHM-5000	Above
8-APR-2006	14	PSFWHM-5000	Below
8-APR-2006	14	PSENERGY-5000	Above
8-APR-2006	22	PSENERGY-5000	Above
8-APR-2006	24	PSFWHM-5000	Below
8-APR-2006	25	PSFWHM-5000	Below
8-APR-2006	25	PSCENTRD-5000	Below
8-APR-2006	39	PSENERGY-5000	Above
8-APR-2006	67	PSFWHM-5000	Above
8-APR-2006	68	PSFWHM-5000	Above
8-APR-2006	71	PSFWHM-5000	Below
8-APR-2006	71	PSENERGY-5000	Above
8-APR-2006	74	PSENERGY-5000	Above
8-APR-2006	84	PSENERGY-5000	Above
8-APR-2006	88	PSFWHM-5000	Above
8-APR-2006	97	PSENERGY-5000	Above
8-APR-2006	105	PSENERGY-5000	Above
8-APR-2006	108	PSFWHM-5000	Above

8-APR-2006	109	PSFWHM-5000	Above
8-APR-2006	115	PSFWHM-5000	Above
8-APR-2006	131	PSFWHM-5000	Above

DETECTORS NOT LISTED HAVE PASSED ALL QUALITY ASSURANCE PARAMETERS

APPROVAL DATE: 4.8.06 APPROVAL TIME: 8:35

APPROVED BY: SRB PROCEDURE # GL-RAD-I-009

Report completed at 8-APR-2006 08:31:20.96

Review of QA results (Daily checks) 8-APR-2006 08:31:22.10

Starting with bank 1
Ending with bank 19

This is a list of Detectors that may not have properly transfered to the QA file

APPROVAL DATE: 4.8.06 APPROVAL TIME: 8.35

APPROVED BY: SKB PROCEDURE # GL-RAD-I-009

Report completed at 8-APR-2006 08:32:07.39

VMS Quality Assurance Report V1.3 Generated 13-APR-2006 06:26:36

QA filename : DKA300:[CANBERRA.GAMMA]QC_WELL.QAF;4

Sample ID : QC_WELL Sample quantity : 1.00 LITER
Sample date : 1-APR-2002 12:00:00 Acquisition date : 13-APR-2006 06:20:59
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:01.71

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
PEAK CENTROID (CHANS) CD-109	170	178	174	
PEAK CENTROID (CHANS) CS-137	1310	1318	1314	
PEAK CENTROID (CHANS) CO-60	2644	2652	2647	
*PEAK ENERGY (keV) CD-109	86	90	88	
*PEAK ENERGY (keV) CS-137	660	664	661	
*PEAK ENERGY (keV) CO-60	1330	1334	1332	
*PEAK FWHM (keV) CD-109	0.1	2.0	1.3	
*PEAK FWHM (keV) CS-137	0.1	3.0	1.7	
*PEAK FWHM (keV) CO-60	0.1	3.0	2.3	
*DECAY CORR. ACT. (pCi) CD-109	7.40E+05	9.90E+05	8.84E+05	
*DECAY CORR. ACT. (pCi) CS-137	2.50E+04	3.06E+04	2.84E+04	
*DECAY CORR. ACT. (pCi) CO-60	3.67E+04	4.49E+04	4.16E+04	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____ Approval Date: 4 / 13 / 06

VMS Quality Assurance Report V1.3 Generated 14-APR-2006 05:29:59

QA filename : DKA300:[CANBERRA.GAMMA]QC_GAMMA9.QAF;3

Sample ID : QC_GAMMA9
Sample date : 1-JAN-2001 12:00:00
Elapsed live time: 0 00:05:00.00
Sample quantity : 1.00 LITER
Acquisition date : 14-APR-2006 05:23:06
Elapsed real time: 0 00:05:01.39

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
PEAK CENTROID (CHANS) CD-109	172	180	176	
PEAK CENTROID (CHANS) CS-137	1319	1327	1321	
PEAK CENTROID (CHANS) CO-60	2661	2669	2661	
*PEAK ENERGY (keV) CD-109	86	90	88	
*PEAK ENERGY (keV) CS-137	660	664	661	
*PEAK ENERGY (keV) CO-60	1330	1334	1332	
*PEAK FWHM (keV) CD-109	0.1	2.0	1.0	
*PEAK FWHM (keV) CS-137	0.1	3.0	1.6	
*PEAK FWHM (keV) CO-60	0.1	3.0	2.1	
DECAY CORR. ACT. (pCi) CD-109	7.14E+05	9.98E+05	9.43E+05	
DECAY CORR. ACT. (pCi) CS-137	2.66E+04	3.14E+04	3.13E+04	
DECAY CORR. ACT. (pCi) CO-60	3.84E+04	4.52E+04	4.44E+04	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: fj Hauk Approval Date: 4 / 14 / 06

VMS Quality Assurance Report V1.3 Generated 14-APR-2006 05:19:32

QA filename : DKA300:[CANBERRA.GAMMA]QC_GAMMA16.QAF;2

Sample ID : QC_GAMMA16 Sample quantity : 1.00 LITER
Sample date : 1-APR-2004 12:00:00 Acquisition date : 14-APR-2006 05:11:53
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:02.13

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
PEAK CENTROID (CHANS) CD-109	172	180	174	
PEAK CENTROID (CHANS) CS-137	1319	1327	1320	
PEAK CENTROID (CHANS) CO-60	2661	2669	2661	
*PEAK ENERGY (keV) CD-109	86	90	88	
*PEAK ENERGY (keV) CS-137	660	664	661	
*PEAK ENERGY (keV) CO-60	1330	1334	1332	
*PEAK FWHM (keV) CD-109	0.1	2.0	1.1	
*PEAK FWHM (keV) CS-137	0.1	3.0	1.5	
*PEAK FWHM (keV) CO-60	0.1	3.0	2.0	
DECAY CORR ACTIVITY (pCi) CD-109	7.41E+05	9.05E+05	7.77E+05	
DECAY CORR ACTIVITY (pCi) CS-137	2.24E+04	2.74E+04	2.60E+04	
DECAY CORR. ACTIVITY (pCi) CO-60	3.55E+04	4.34E+04	3.94E+04	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: fj Hauk Approval Date: 4 / 14 / 06

VMS Quality Assurance Report V1.3 Generated 14-APR-2006 05:31:30

QA filename : DKA300:[CANBERRA.GAMMA]QC_GAMMA17.QAF;3

Sample ID : QC_GAMMA17 Sample quantity : 1.00 LITER
Sample date : 1-APR-2002 12:00:00 Acquisition date : 14-APR-2006 05:23:29
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:02.55

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
PEAK CENTROID (CHANS) CD-109	161	169	165	
PEAK CENTROID (CHANS) CS-137	1313	1321	1317	
PEAK CENTROID (CHANS) CO-60	2664	2672	2665	
*PEAK ENERGY (keV) CD-109	86	90	88	
*PEAK ENERGY (keV) CS-137	660	664	662	
*PEAK ENERGY (keV) CO-60	1330	1334	1333	
*PEAK FWHM (keV) CD-109	0.1	2.0	1.2	
*PEAK FWHM (keV) CS-137	0.1	3.0	1.6	
*PEAK FWHM (keV) CO-60	0.1	3.0	1.9	
DECAY CORR ACTIVITY (pCi) CD-109	7.61E+05	9.30E+05	8.71E+05	
DECAY CORR ACTIVITY (pCi) CS-137	2.51E+04	3.07E+04	2.94E+04	
DECAY CORR. ACTIVITY (pCi) CO-60	3.68E+04	4.50E+04	4.15E+04	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____ Approval Date: 4 / 14 / 06

QA filename : DKA0:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM19_CAN.QAF;5

Sample ID : Calib Check Sample quantity : 1.00 EACH
Sample date : 1-APR-2005 12:00:00 Acquisition date : 14-APR-2006 05:26:21
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:02.92

Out-of-range Test: N-SIGMA

Parameter Description [Mean+/-Stdev]	Value	Deviation	Flag
*DECAY CORRECTED ACTIVITY CD-109 [4.5528E+05+/-6559]	4.5344E+05	-0.28	
*DECAY CORRECTED ACTIVITY CS-137 [2.4788E+04+/-427.4]	2.4554E+04	-0.55	
*DECAY CORRECTED ACTIVITY CO-60 [3.4880E+04+/-552.9]	3.5432E+04	1.00	

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
*PEAK CENTROID CD-109	1.7400E+02	1.8200E+02	1.7583E+02	
*PEAK CENTROID CS-137	1.3170E+03	1.3250E+03	1.3225E+03	
*PEAK CENTROID CO-60	2.6590E+03	2.6670E+03	2.6647E+03	
*PEAK ENERGY CD-109	8.6030E+01	9.0030E+01	8.8127E+01	
*PEAK ENERGY CS-137	6.5964E+02	6.6364E+02	6.6199E+02	
*PEAK ENERGY CO-60	1.3305E+03	1.3345E+03	1.3334E+03	
*PEAK FWHM CD-109	1.0000E+00	1.5000E+00	1.3151E+00	
*PEAK FWHM CS-137	1.0000E+00	2.0000E+00	1.7773E+00	
*PEAK FWHM CO-60	1.5000E+00	2.5000E+00	2.0616E+00	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: fg Hardy Approval Date: 4 / 14 / 06

VMS Quality Assurance Report V1.3 Generated 14-APR-2006 05:40:11

QA filename : DKA300:[CANBERRA.GAMMA]QC_HP.QAF;4

Sample ID : QC_HP
Sample date : 1-APR-2003 12:00:00
Elapsed live time: 0 00:05:00.00
Sample quantity : 1.00 LITER
Acquisition date : 14-APR-2006 05:33:54
Elapsed real time: 0 00:05:02.88

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
PEAK CENTROID (CHANS) CD-109	172	180	173	
PEAK CENTROID (CHANS) CS-137	1317	1325	1321	
PEAK CENTROID (CHANS) CO-60	2657	2665	2663	
*PEAK ENERGY (keV) CD-109	86	90	88	
*PEAK ENERGY (keV) CS-137	660	664	661	
*PEAK ENERGY (keV) CO-60	1330	1334	1332	
*PEAK FWHM (keV) CD-109	0.1	2.0	1.1	
*PEAK FWHM (keV) CS-137	0.1	3.0	1.7	
*PEAK FWHM (keV) CO-60	0.1	3.0	2.4	
DECAY CORR ACTIVITY (pCi) CD-109	7.13E+05	8.71E+05	7.94E+05	
DECAY CORR ACTIVITY (pCi) CS-137	2.23E+04	2.73E+04	2.71E+04	
DECAY CORR. ACTIVITY (pCi) CO-60	3.57E+04	4.37E+04	4.10E+04	

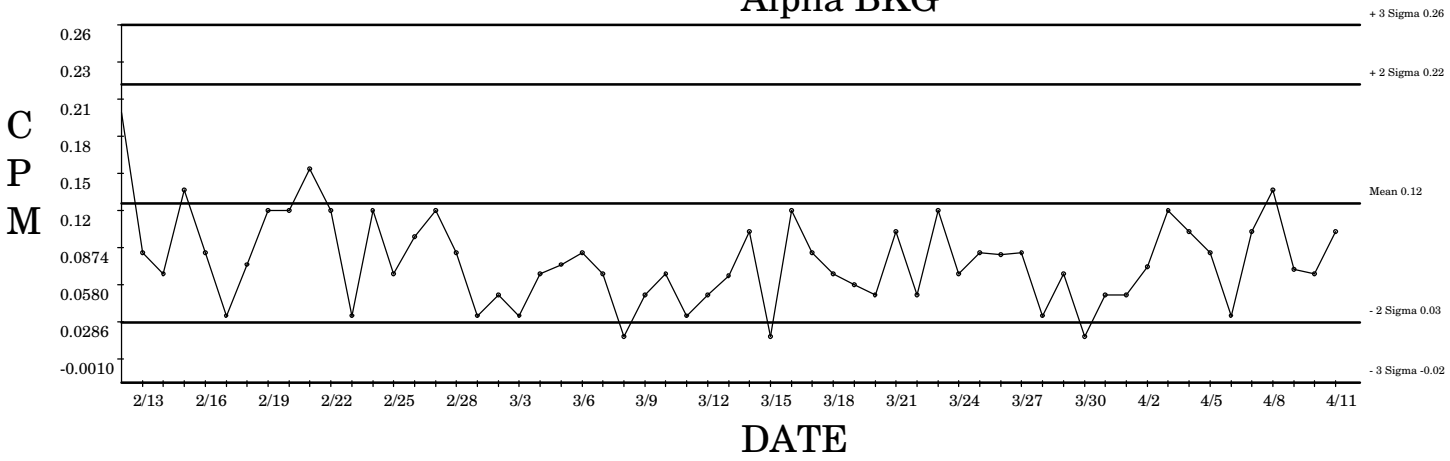
Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____ Approval Date: 4 / 14 / 06

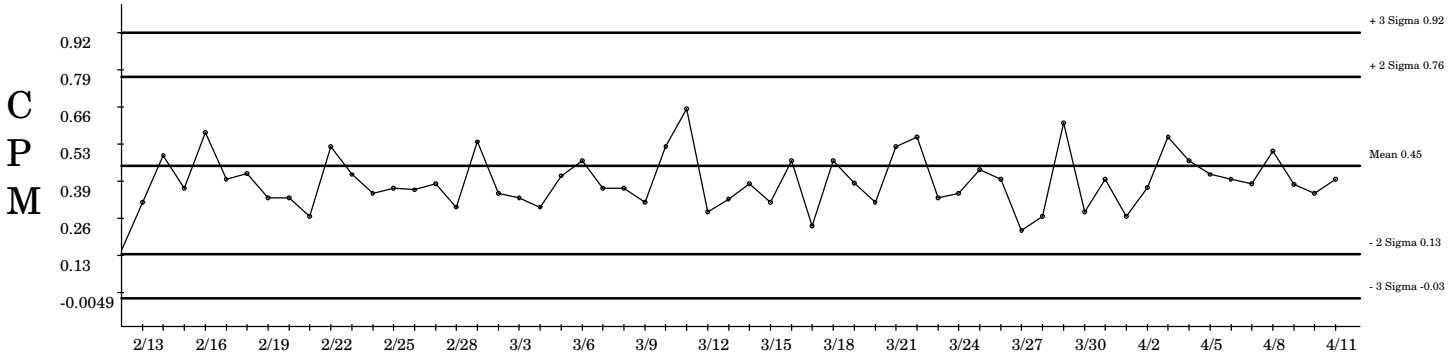
BACKGROUND AND EFFICIENCY DATA

PIC3B 04/11/2006

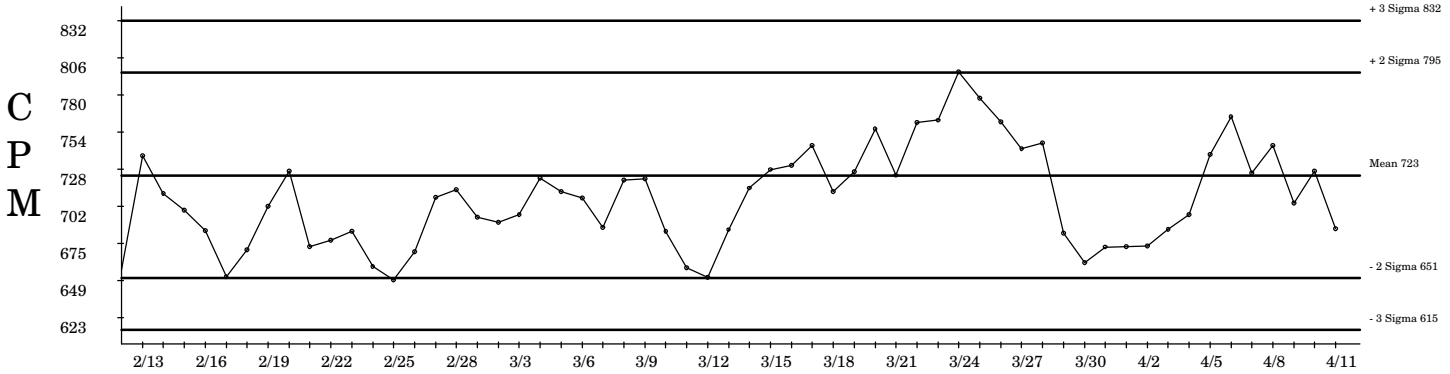
Alpha BKG



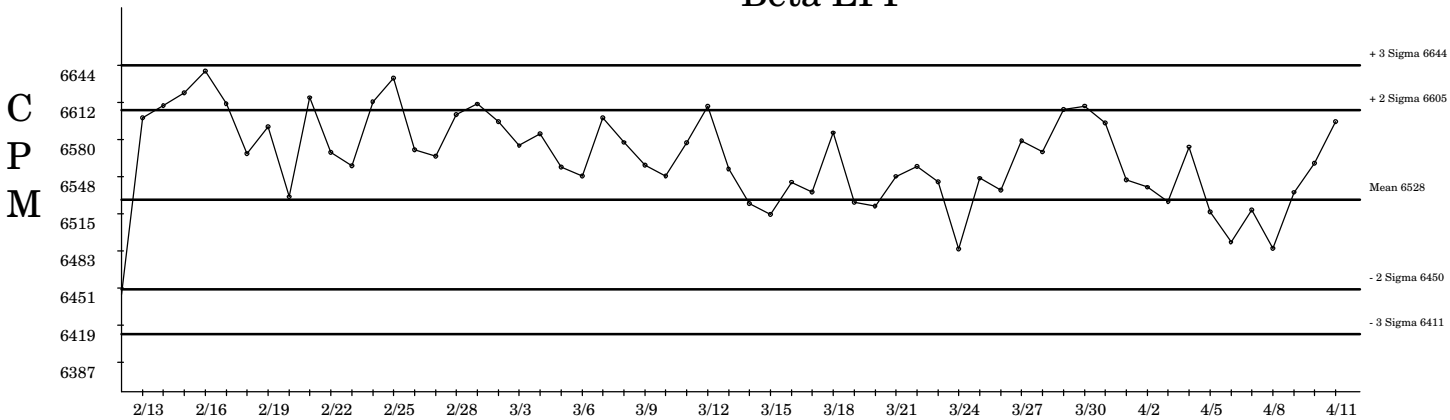
Beta BKG



Alpha EFF



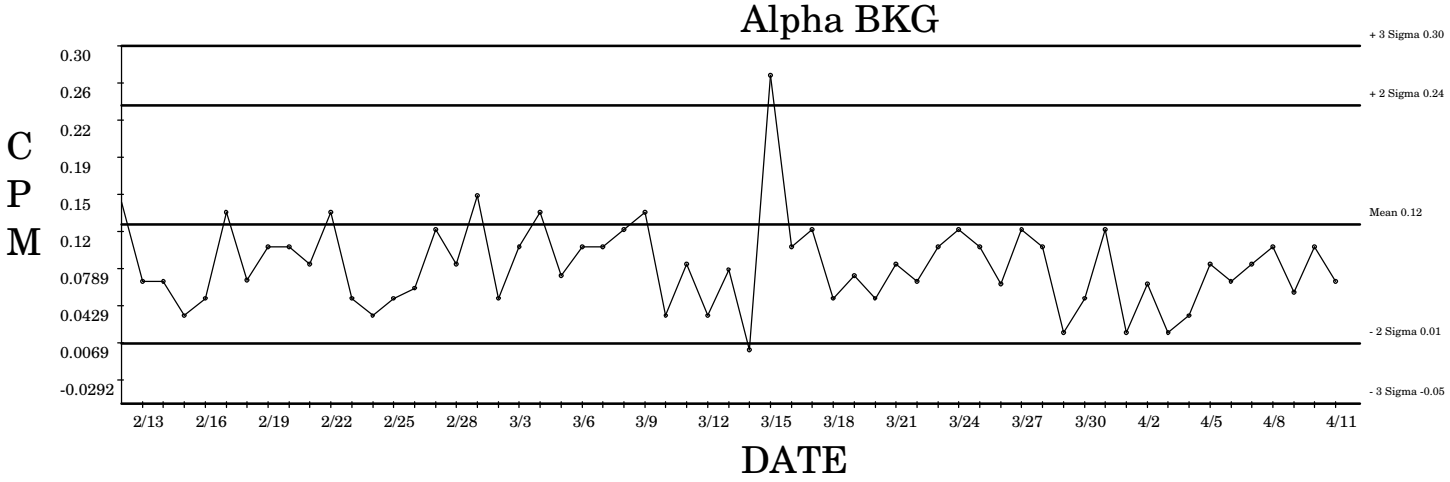
Beta EFF



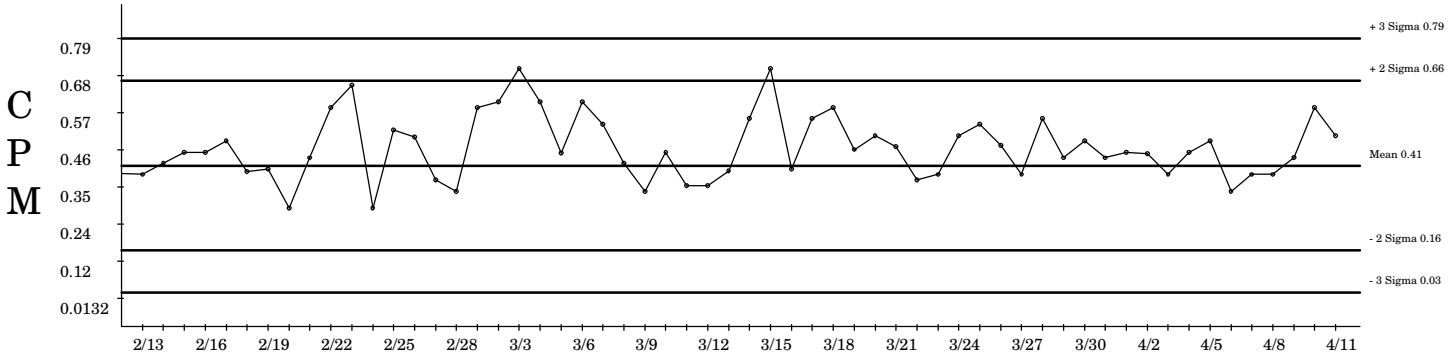
○ Denotes Outlier

PIC3C 04/11/2006

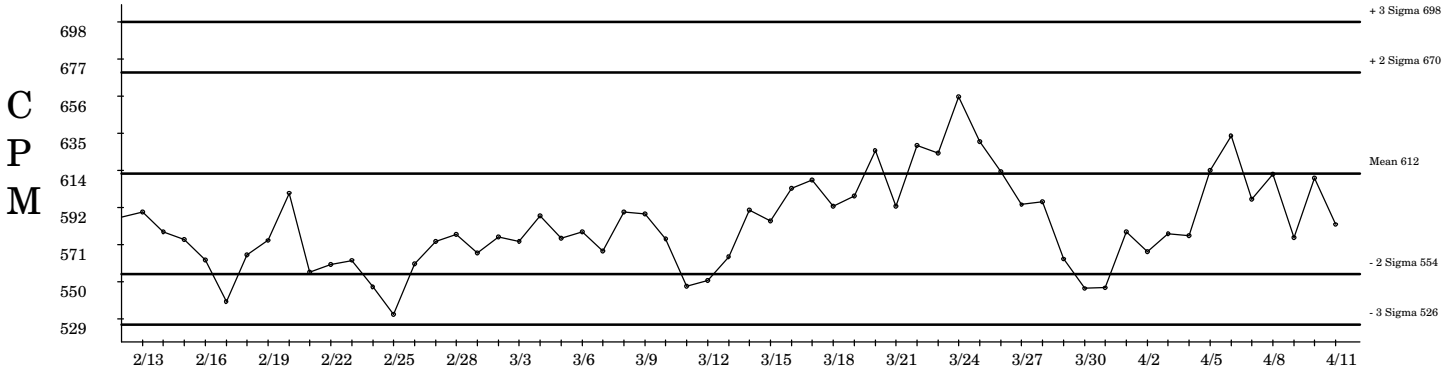
Alpha BKG



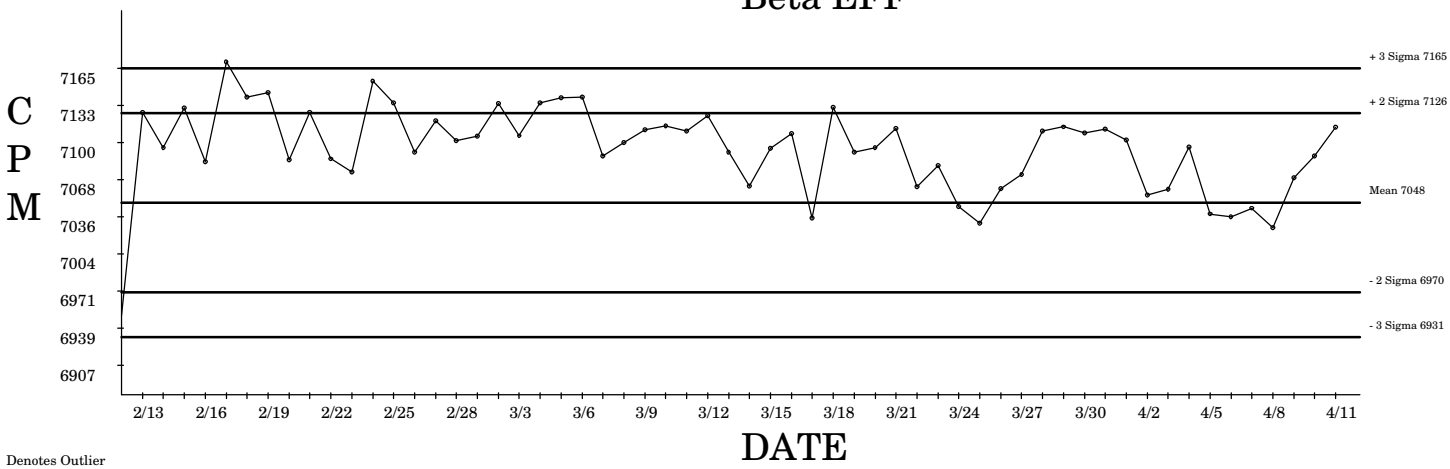
Beta BKG



Alpha EFF



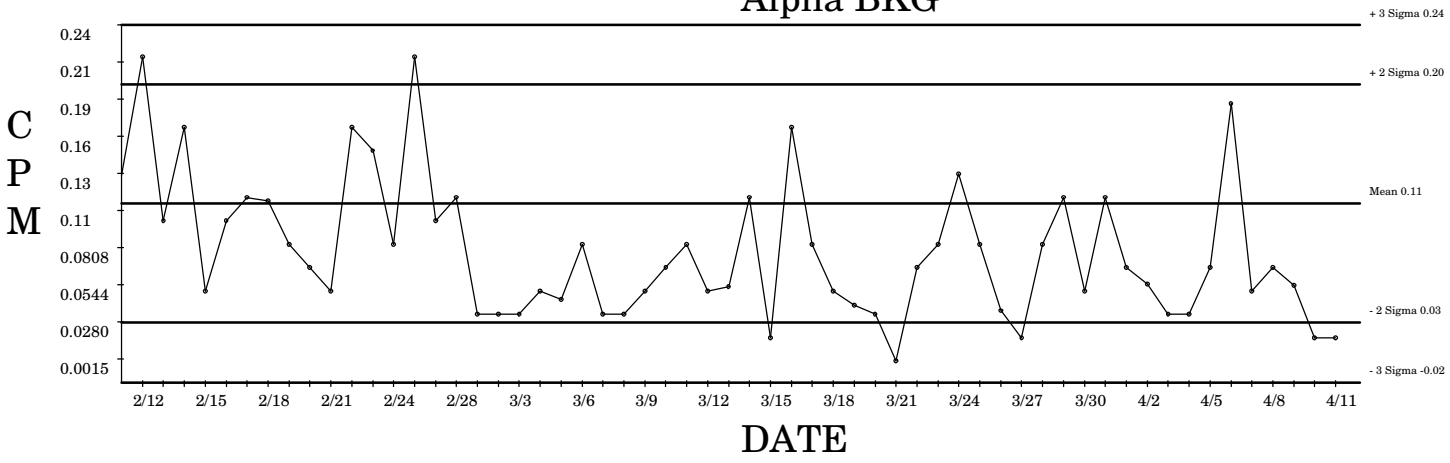
Beta EFF



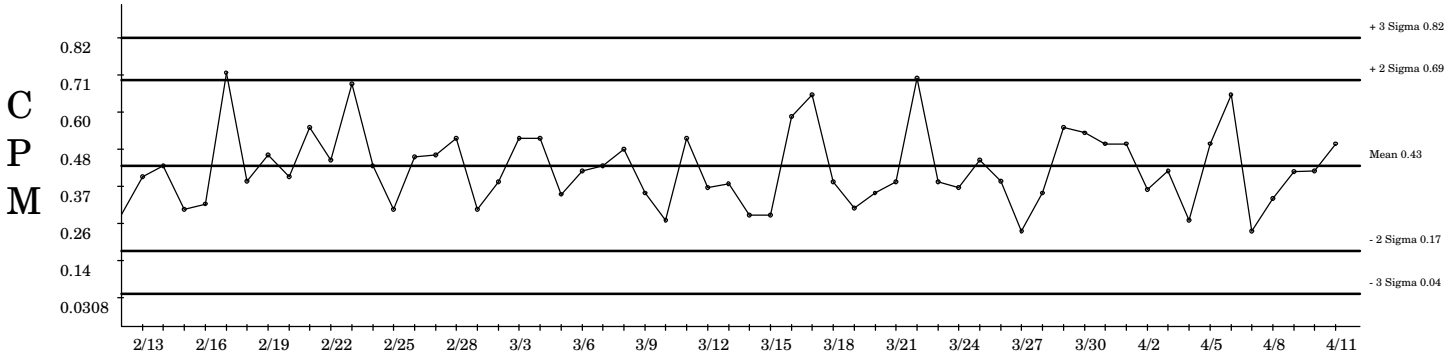
○ Denotes Outlier

PIC3D 04/11/2006

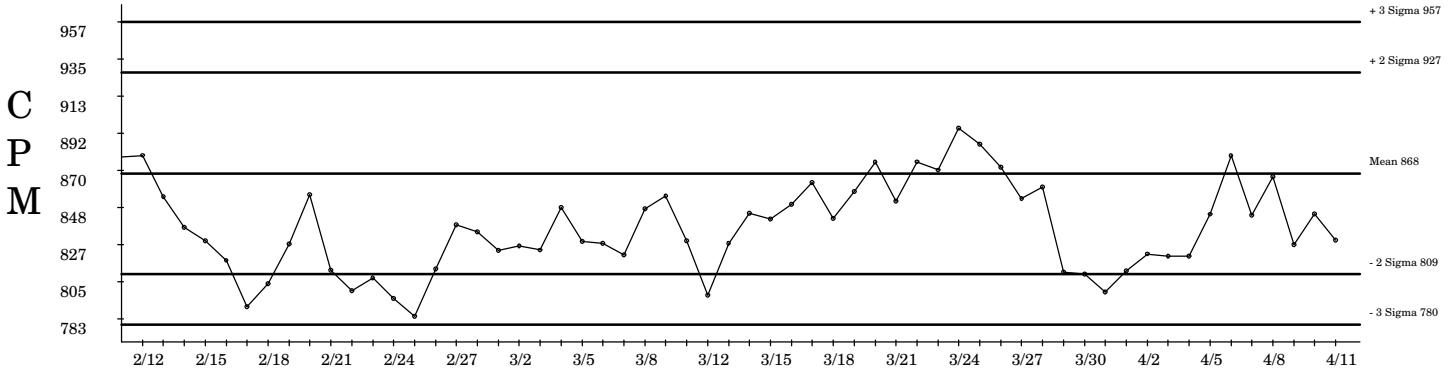
Alpha BKG



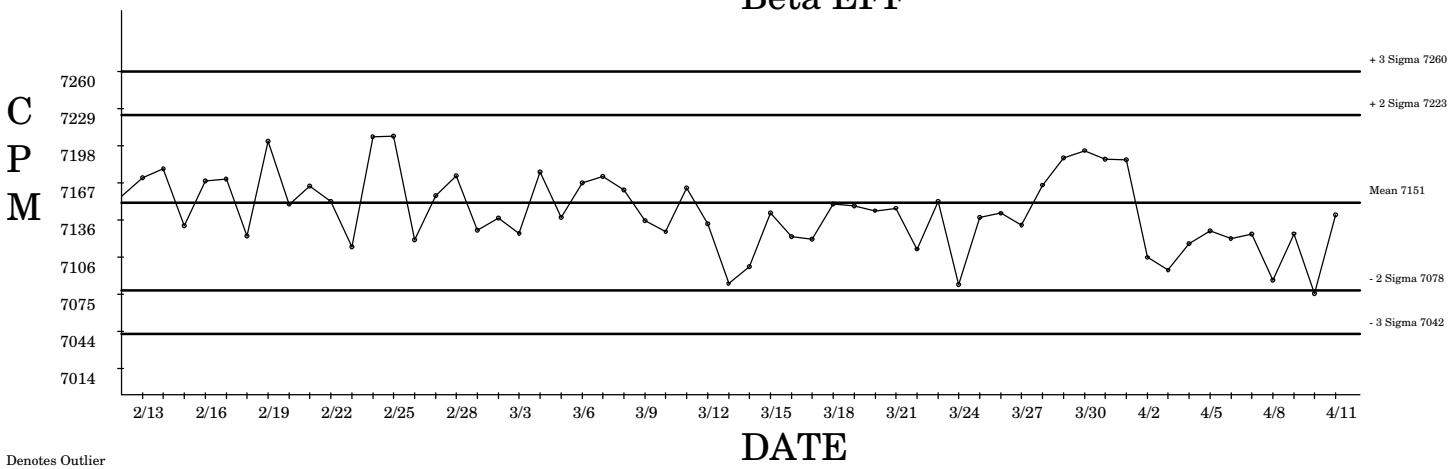
Beta BKG



Alpha EFF



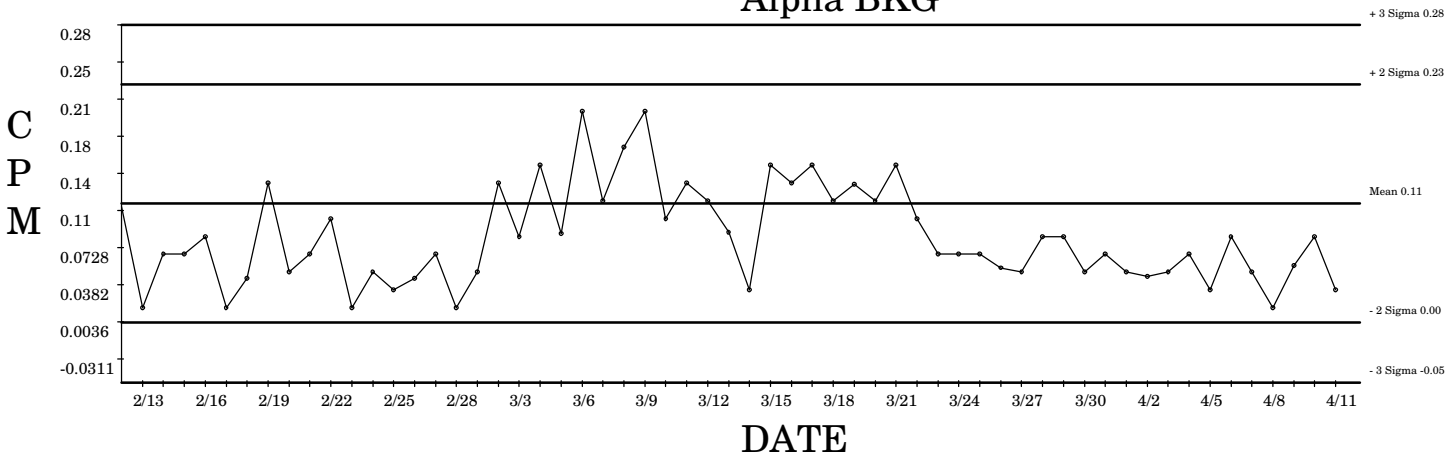
Beta EFF



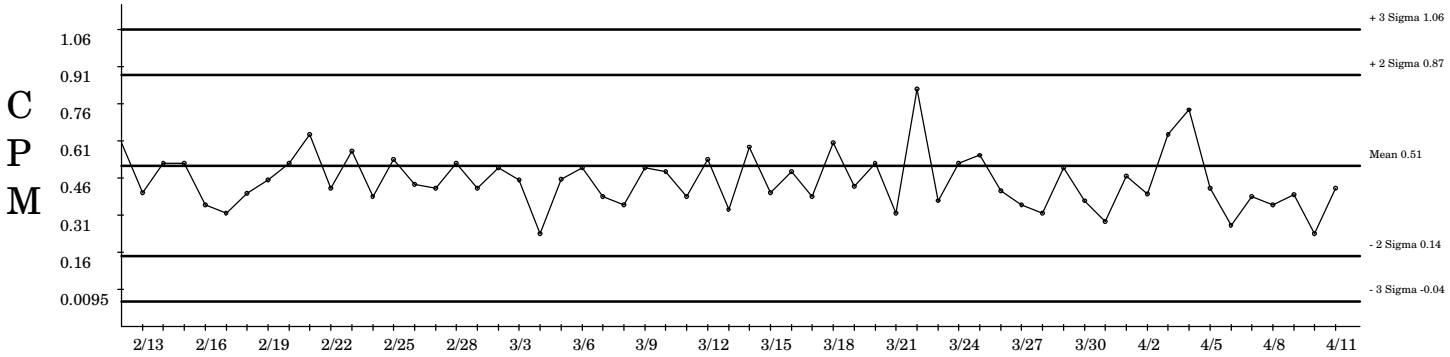
○ Denotes Outlier

PIC4A 04/11/2006

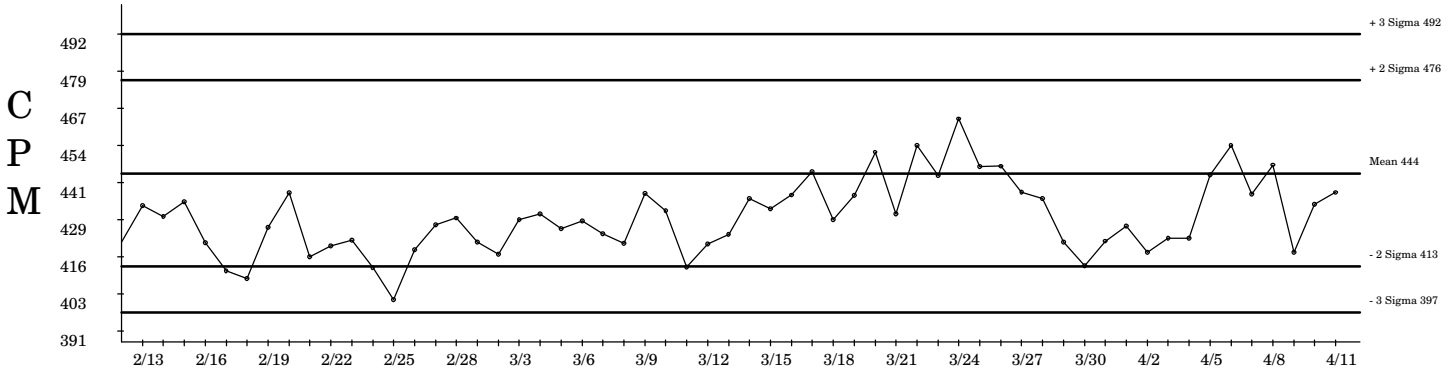
Alpha BKG



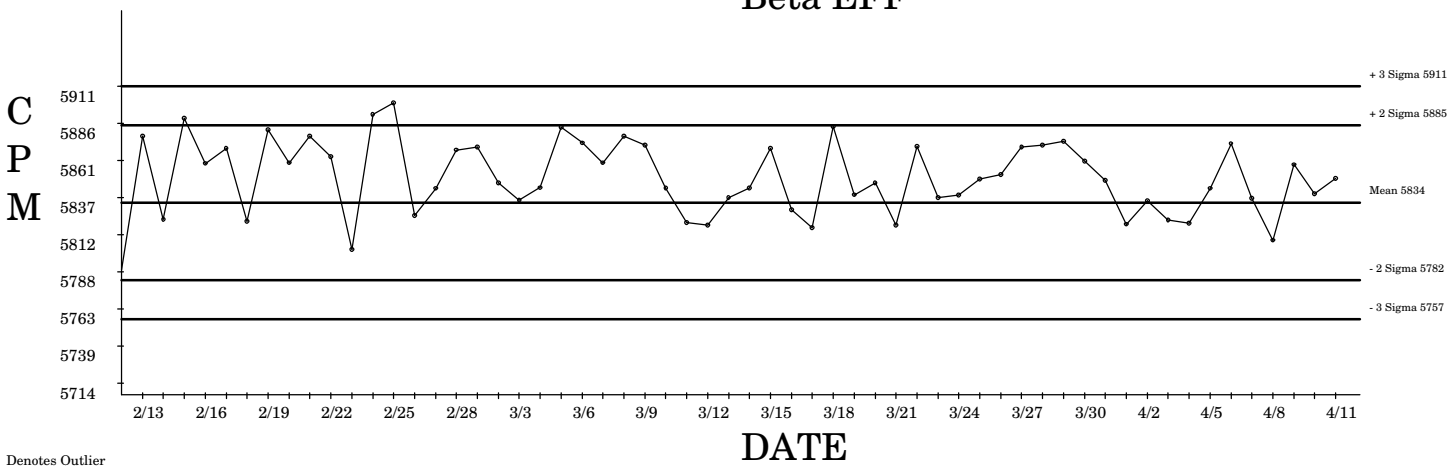
Beta BKG



Alpha EFF



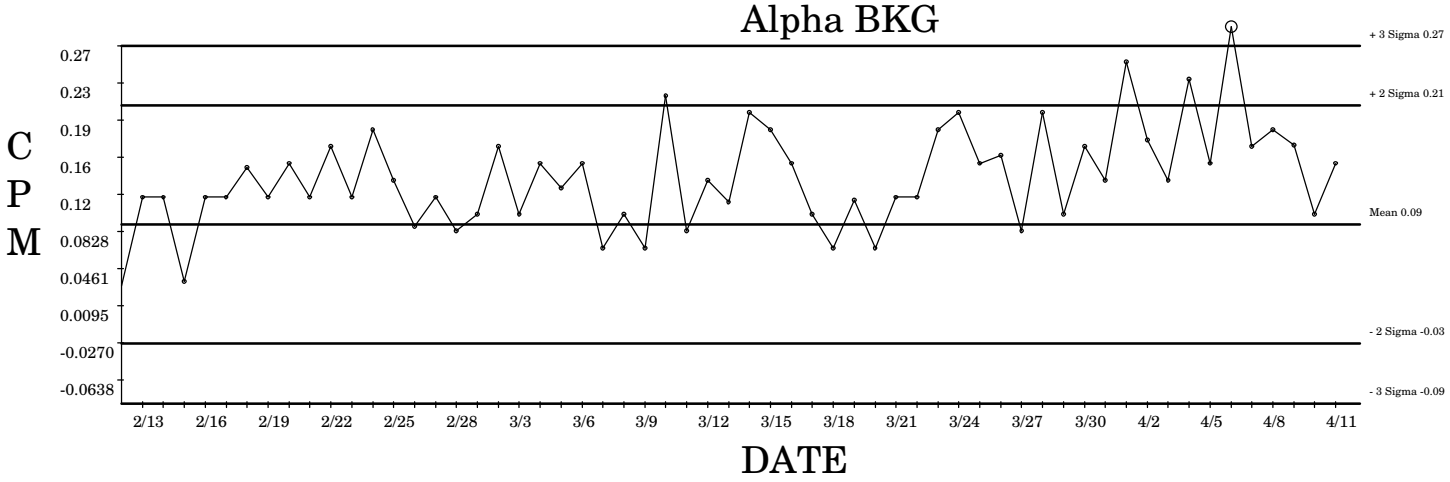
Beta EFF



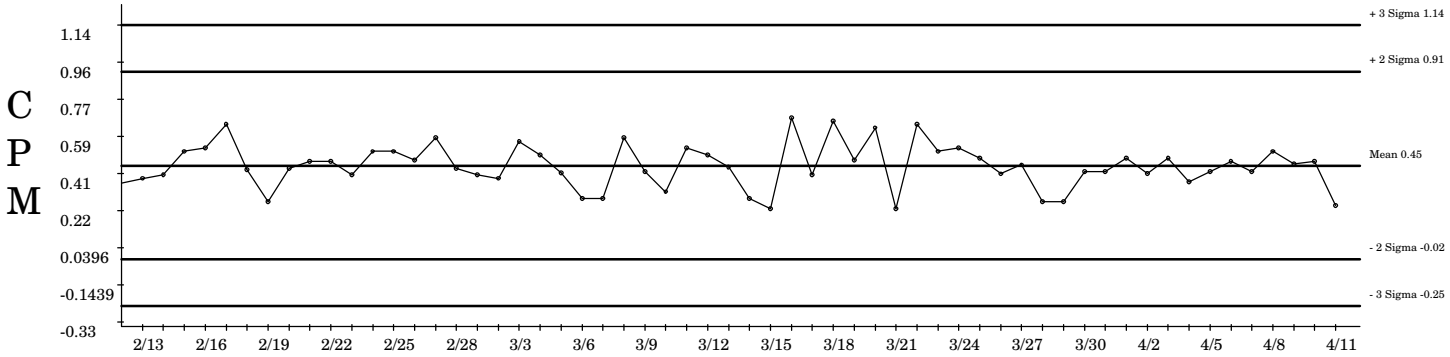
○ Denotes Outlier

PIC4B 04/11/2006

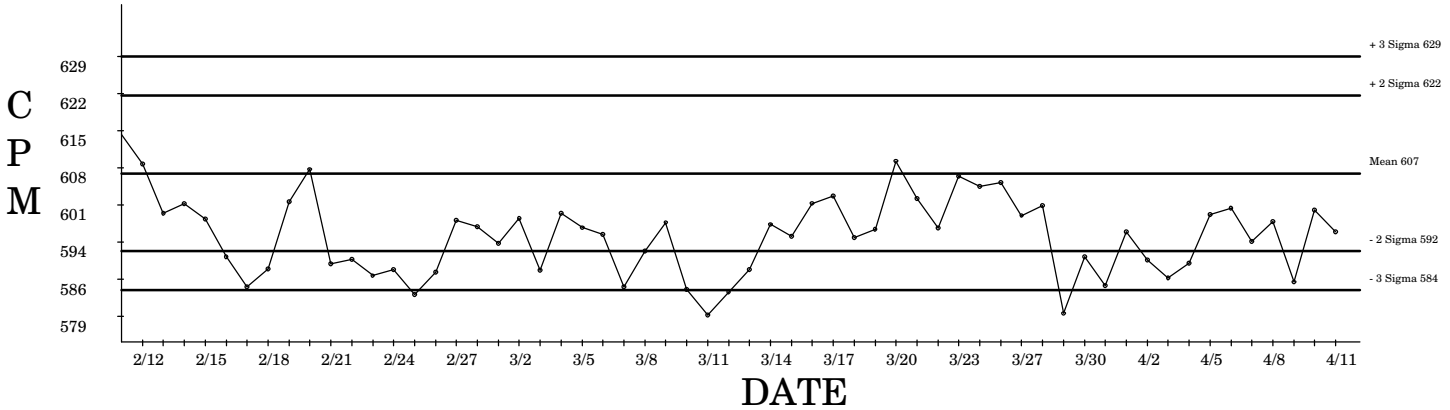
Alpha BKG



Beta BKG



Alpha EFF



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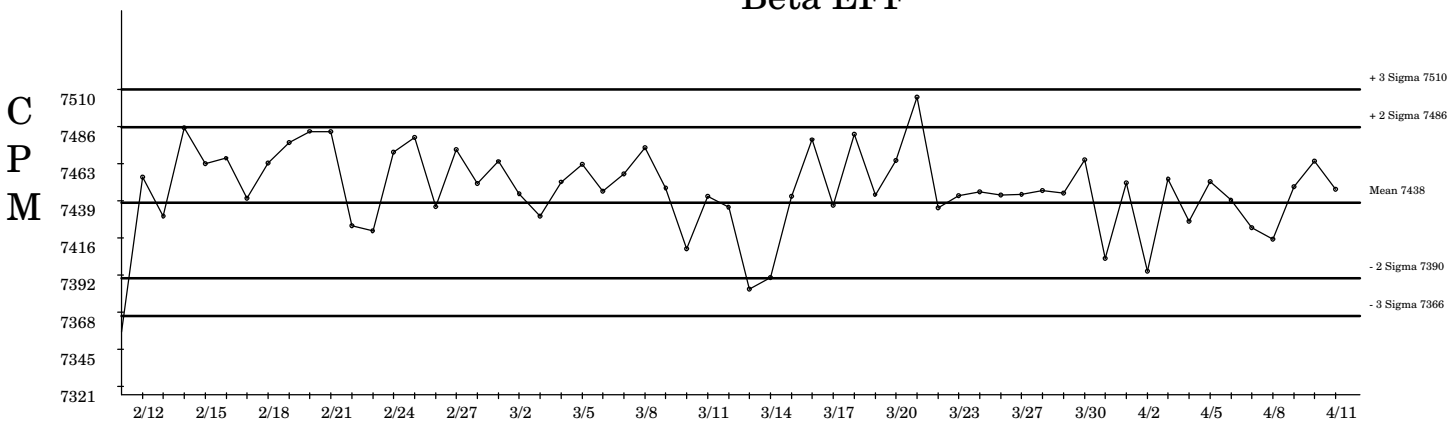
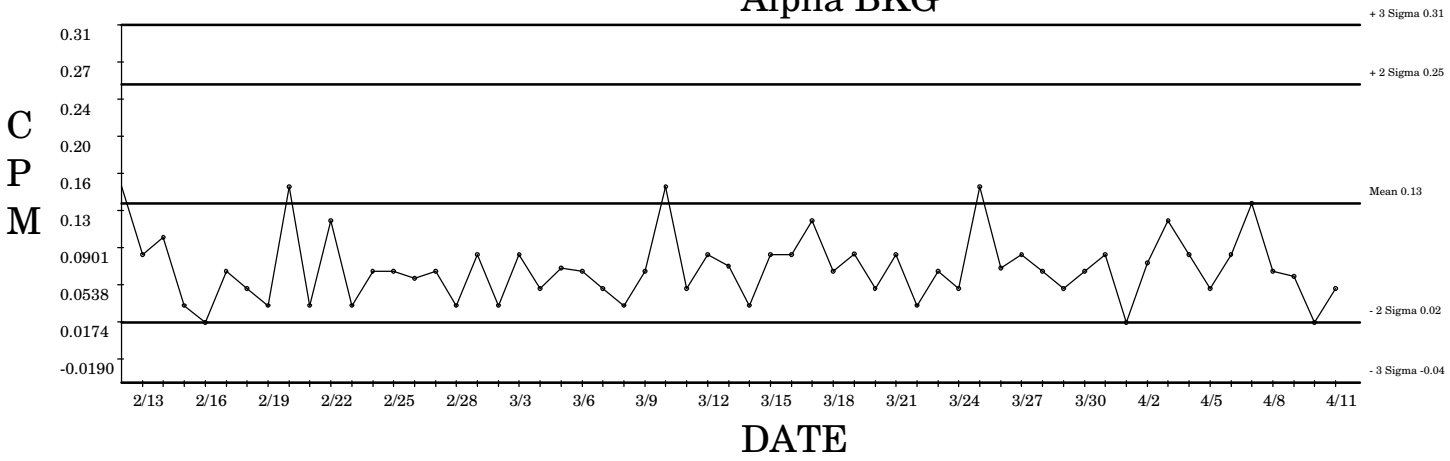


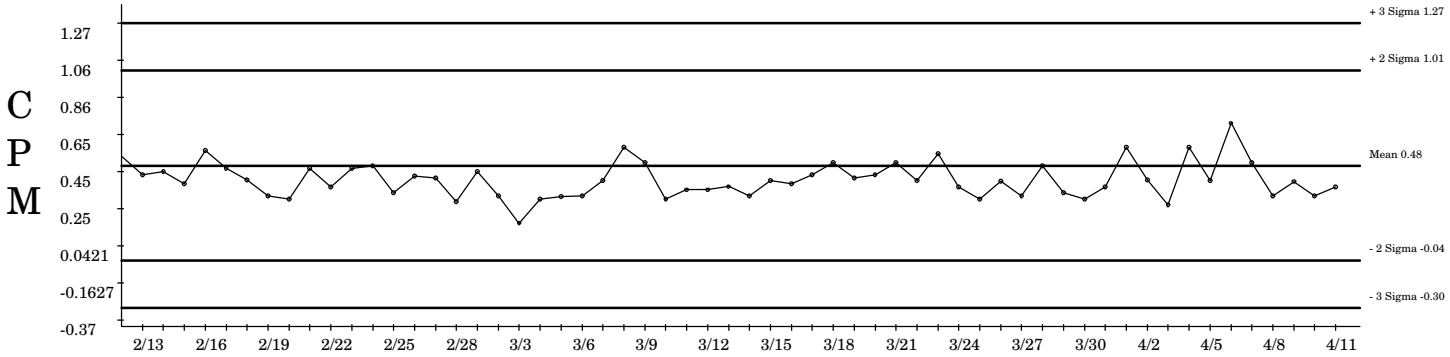
○ Denotes Outlier

PIC4C 04/11/2006

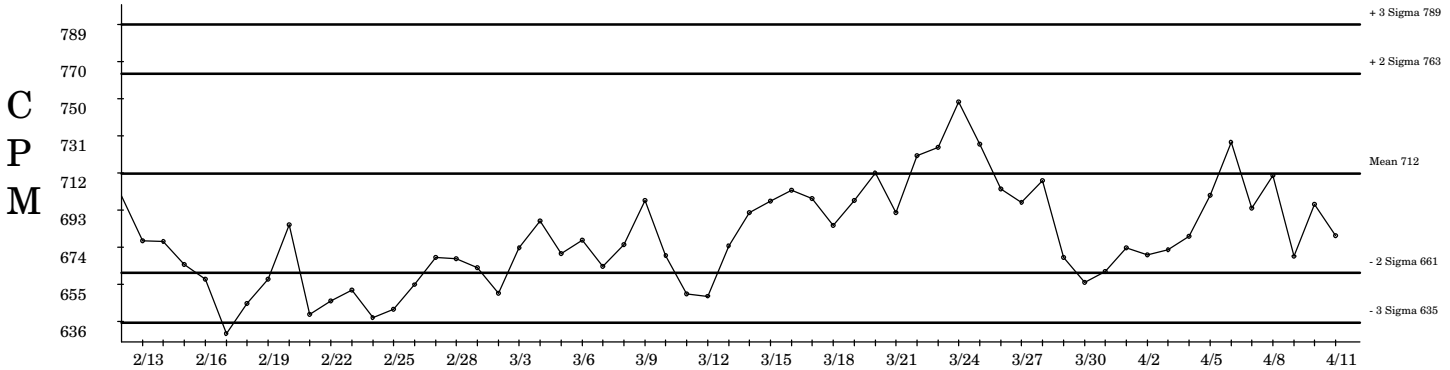
Alpha BKG



Beta BKG



Alpha EFF



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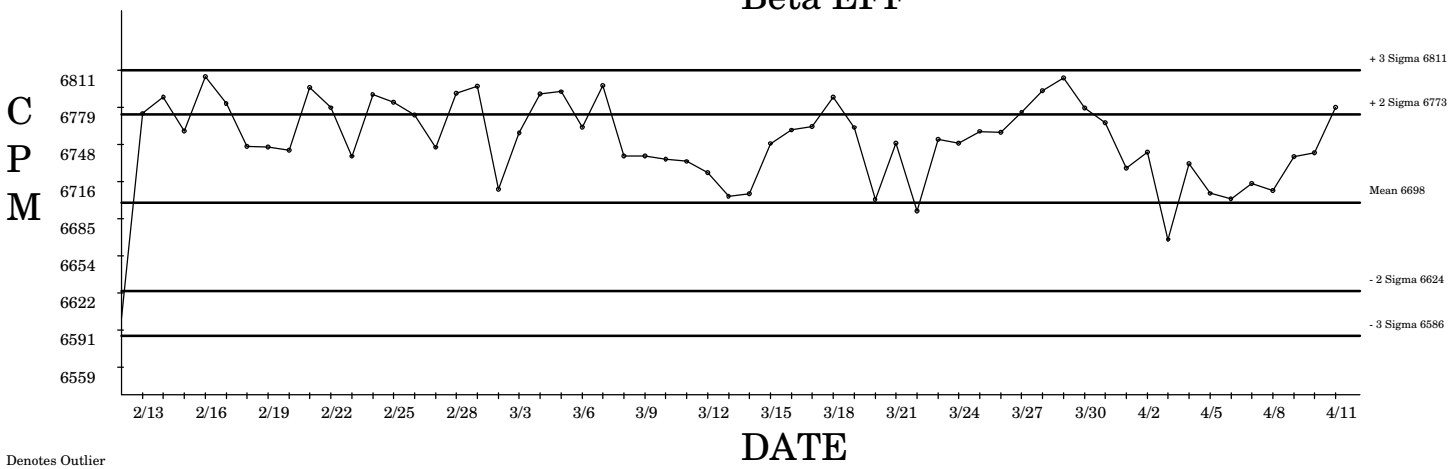
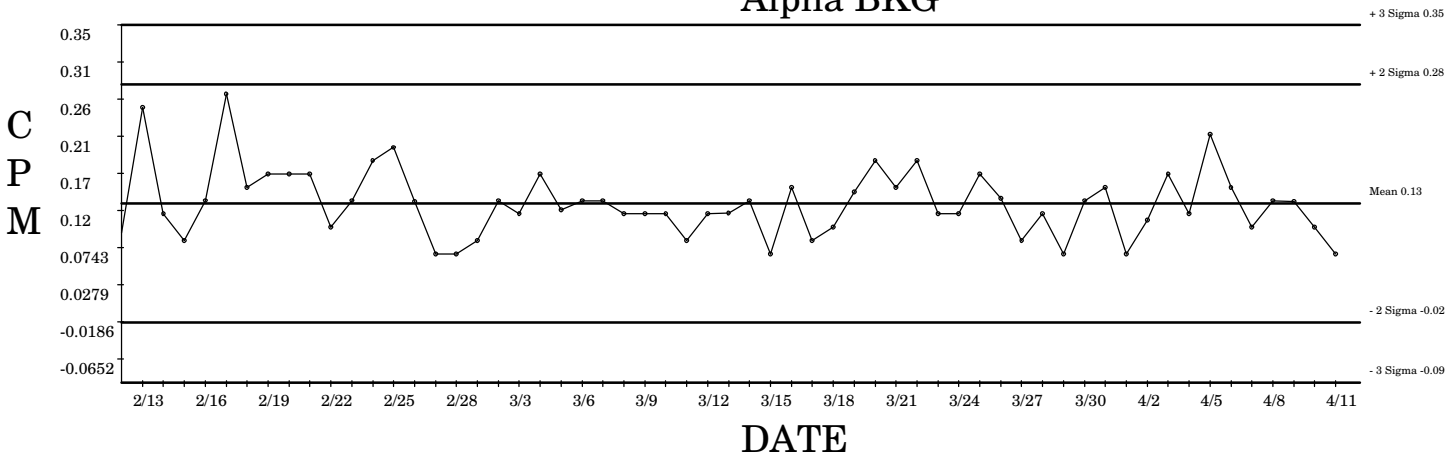


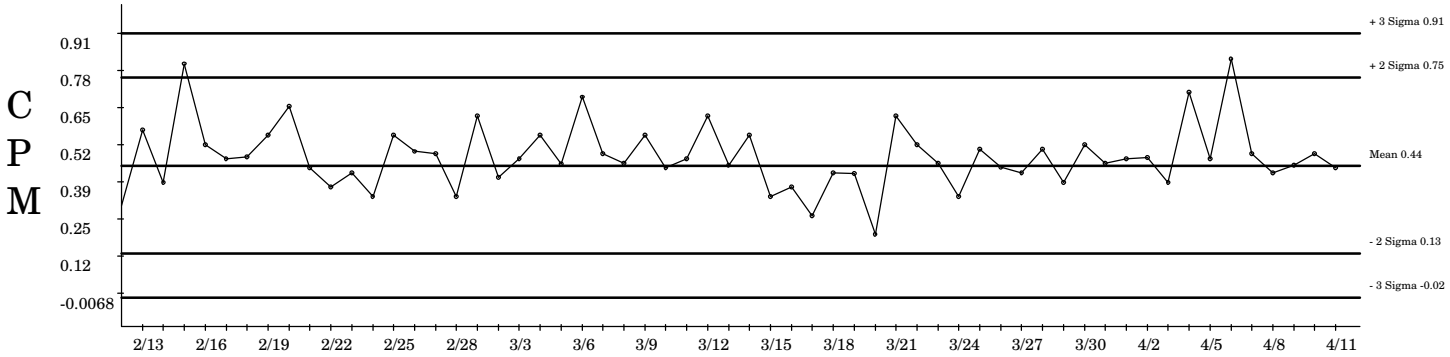
○ Denotes Outlier

PIC4D 04/11/2006

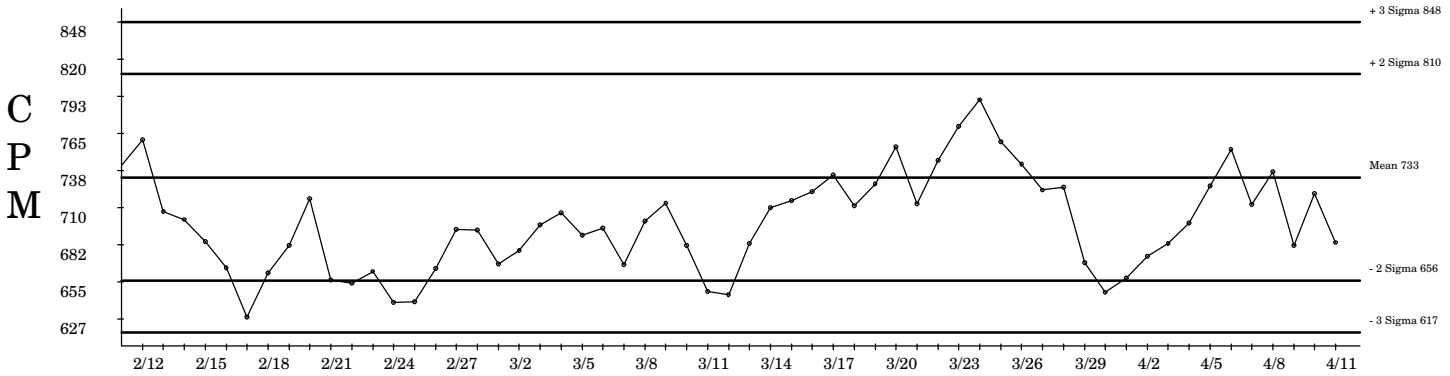
Alpha BKG



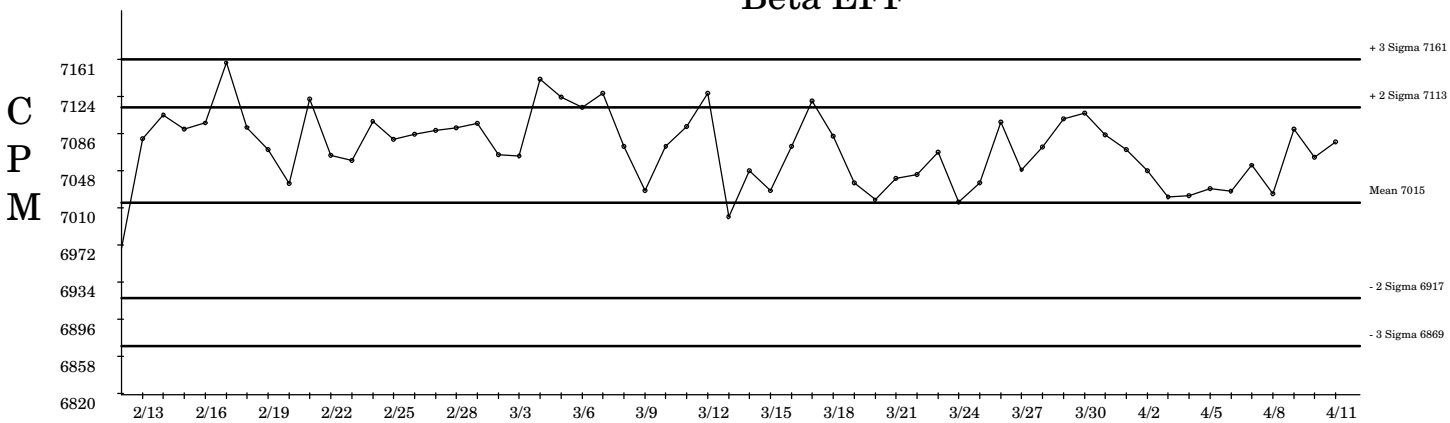
Beta BKG



Alpha EFF

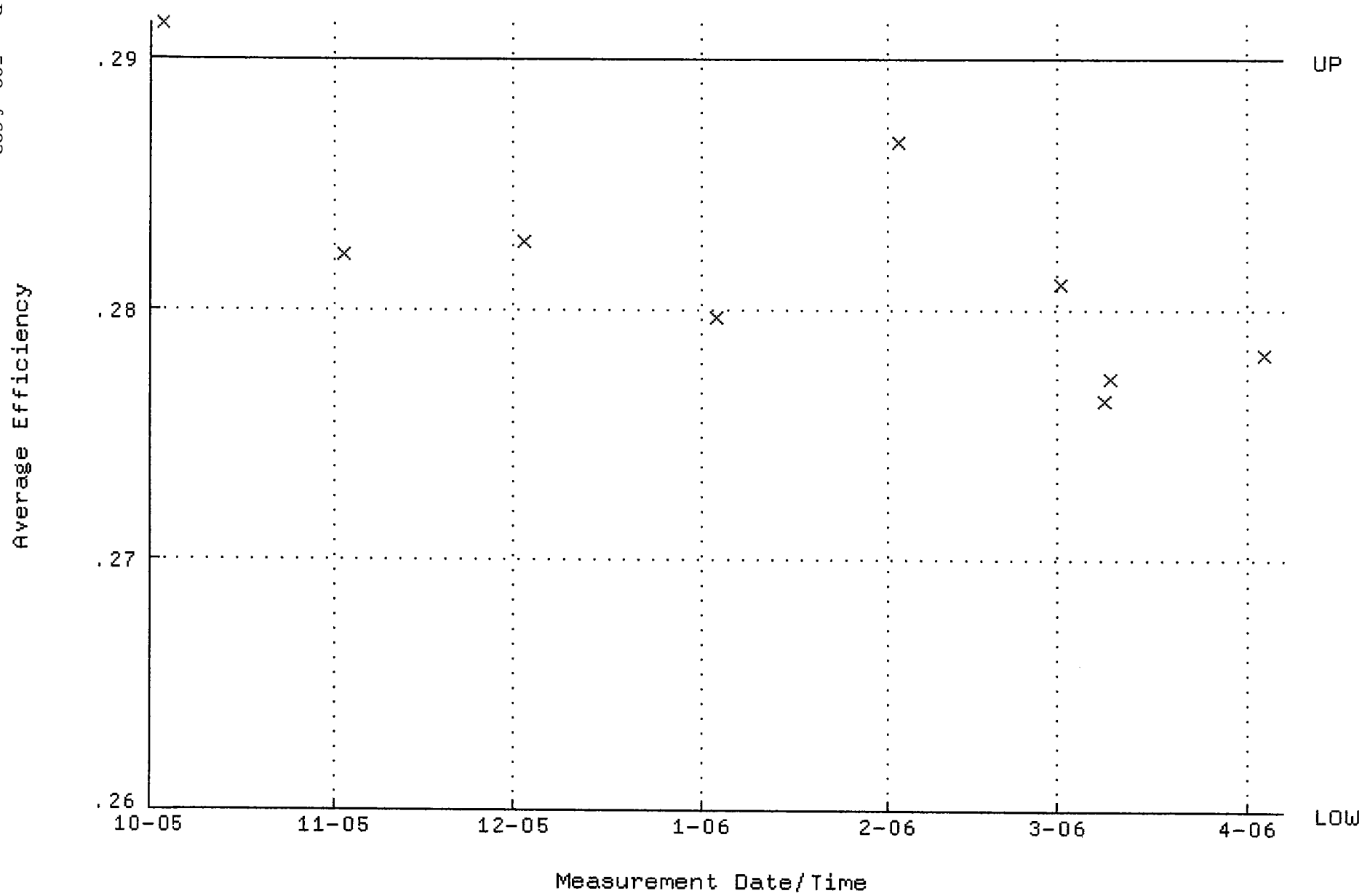


Beta EFF

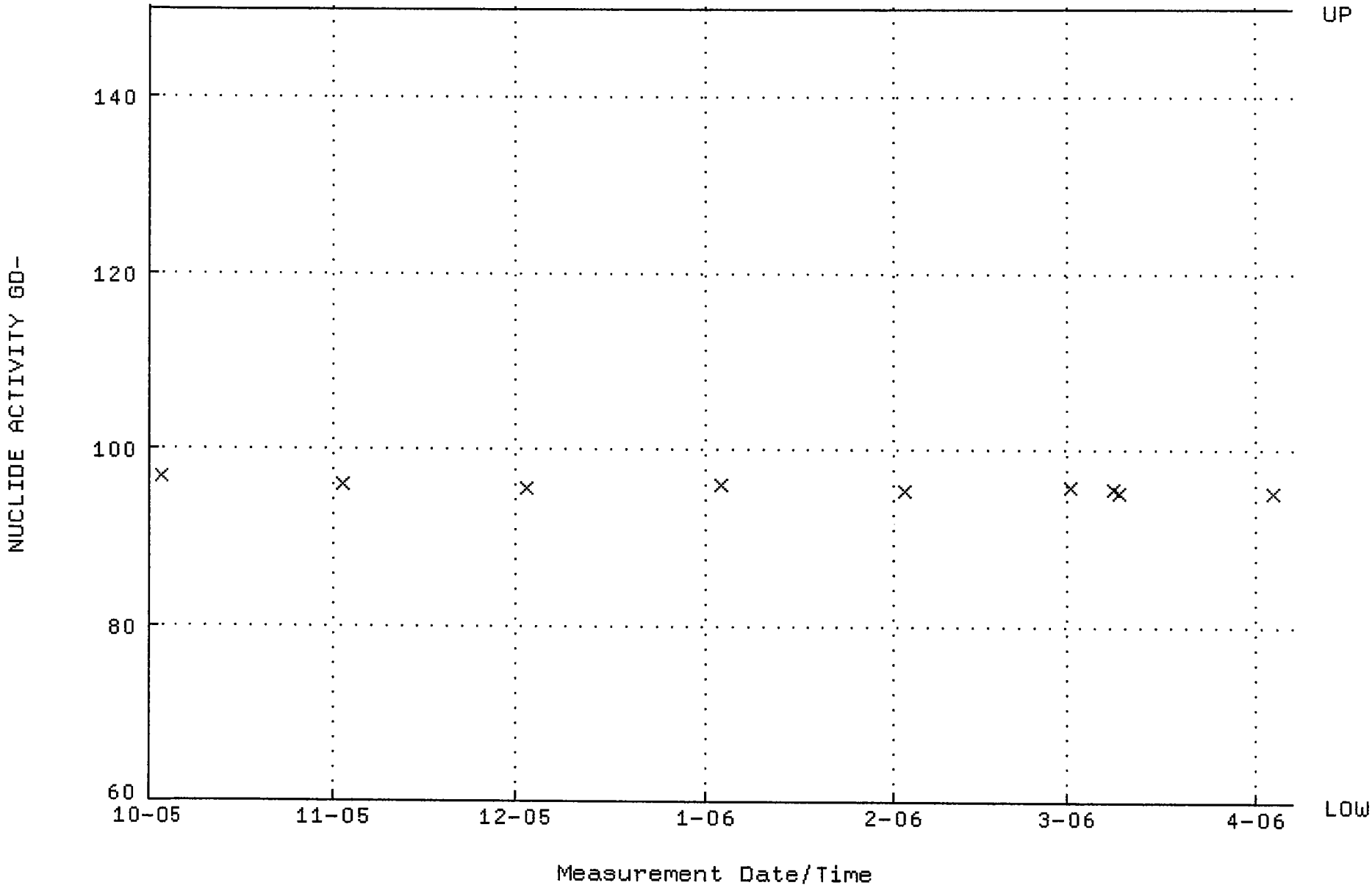


○ Denotes Outlier

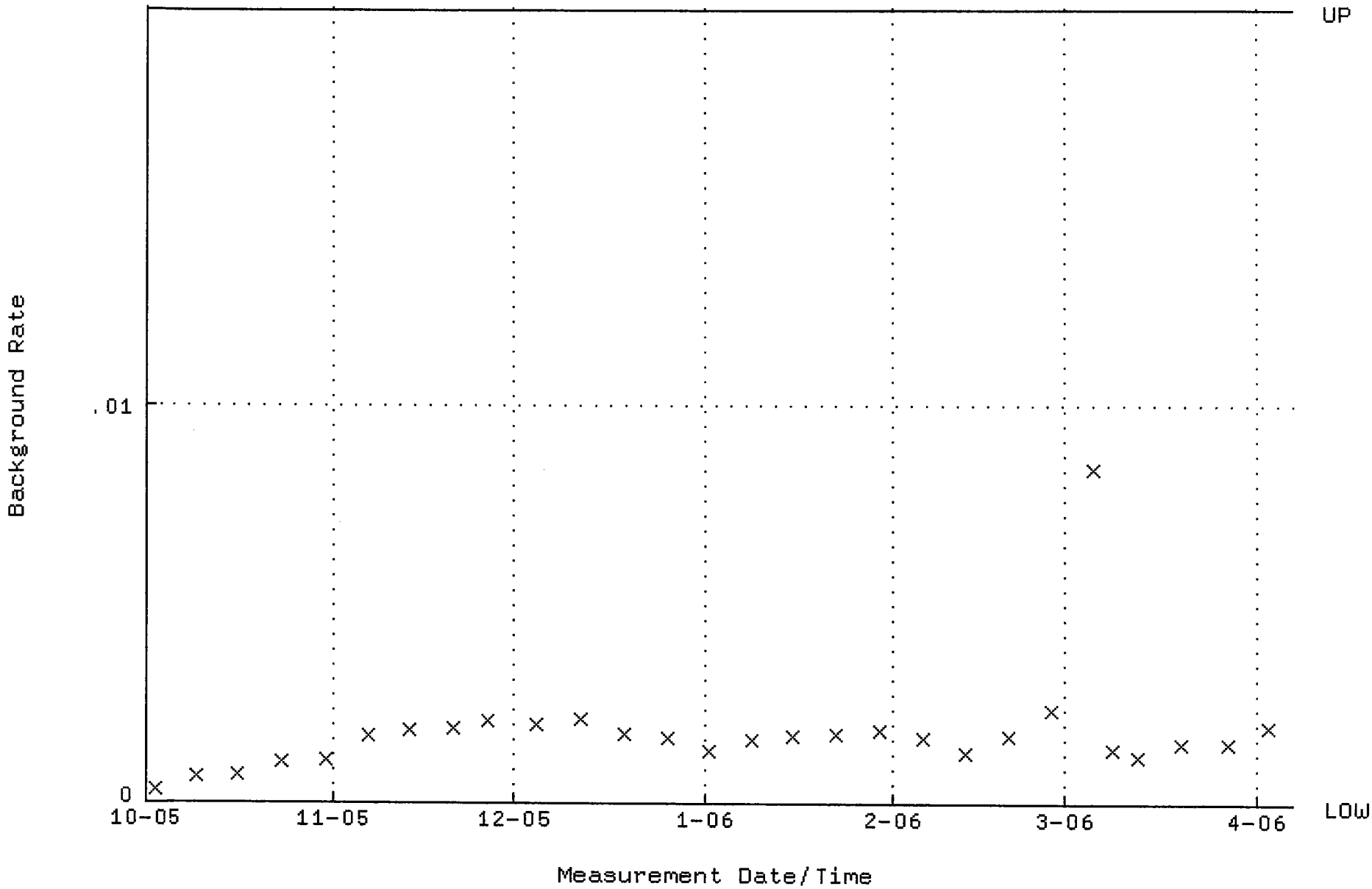
QA filename : DKA100:[ENV_ALPHA.QA.W]W001.QAF;5
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 07:10:37 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.260000 through 0.290000



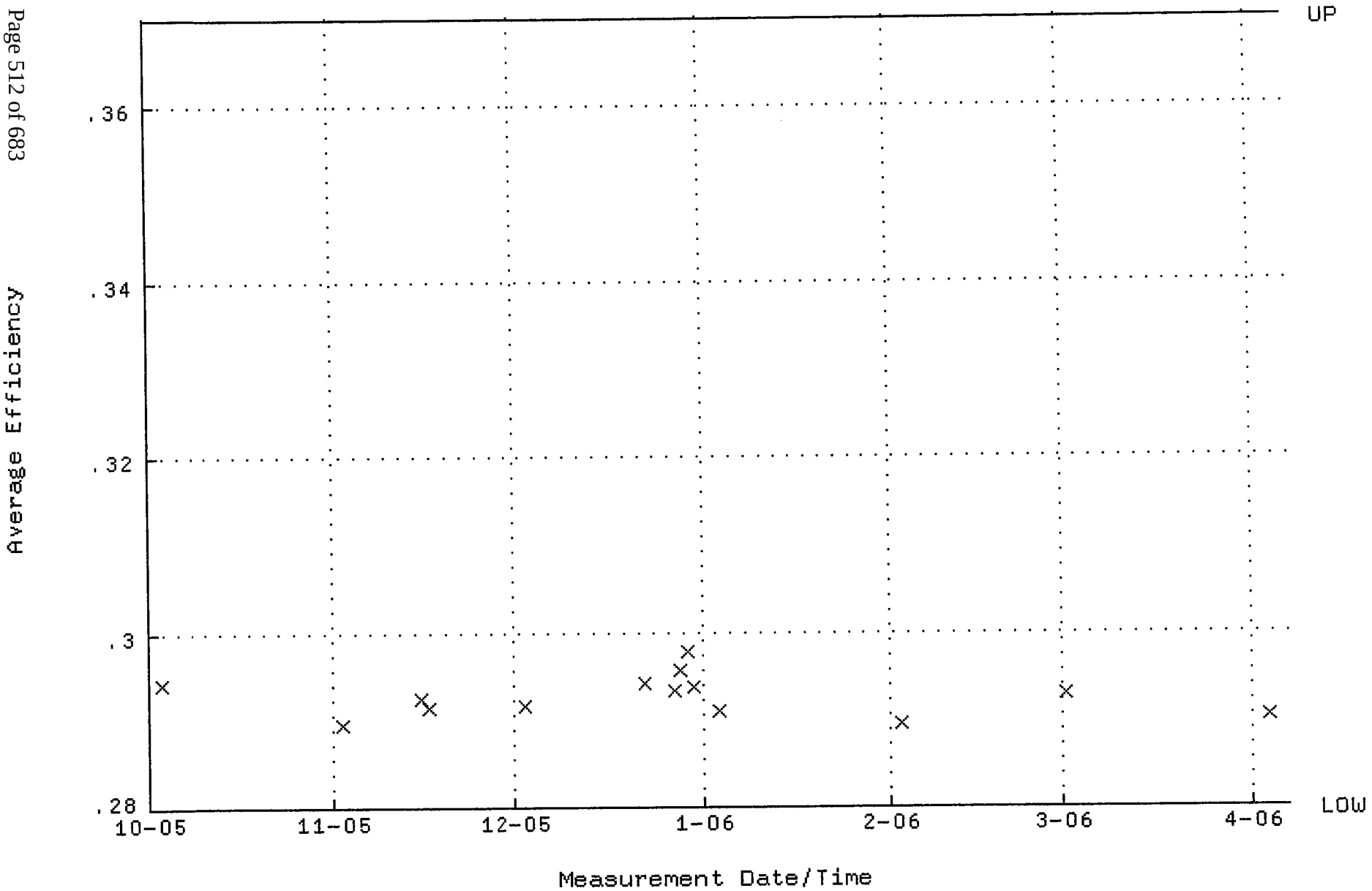
QA filename : DKA100:[ENV_ALPHA.QA.W]W001.QAF;5
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 07:10:37 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



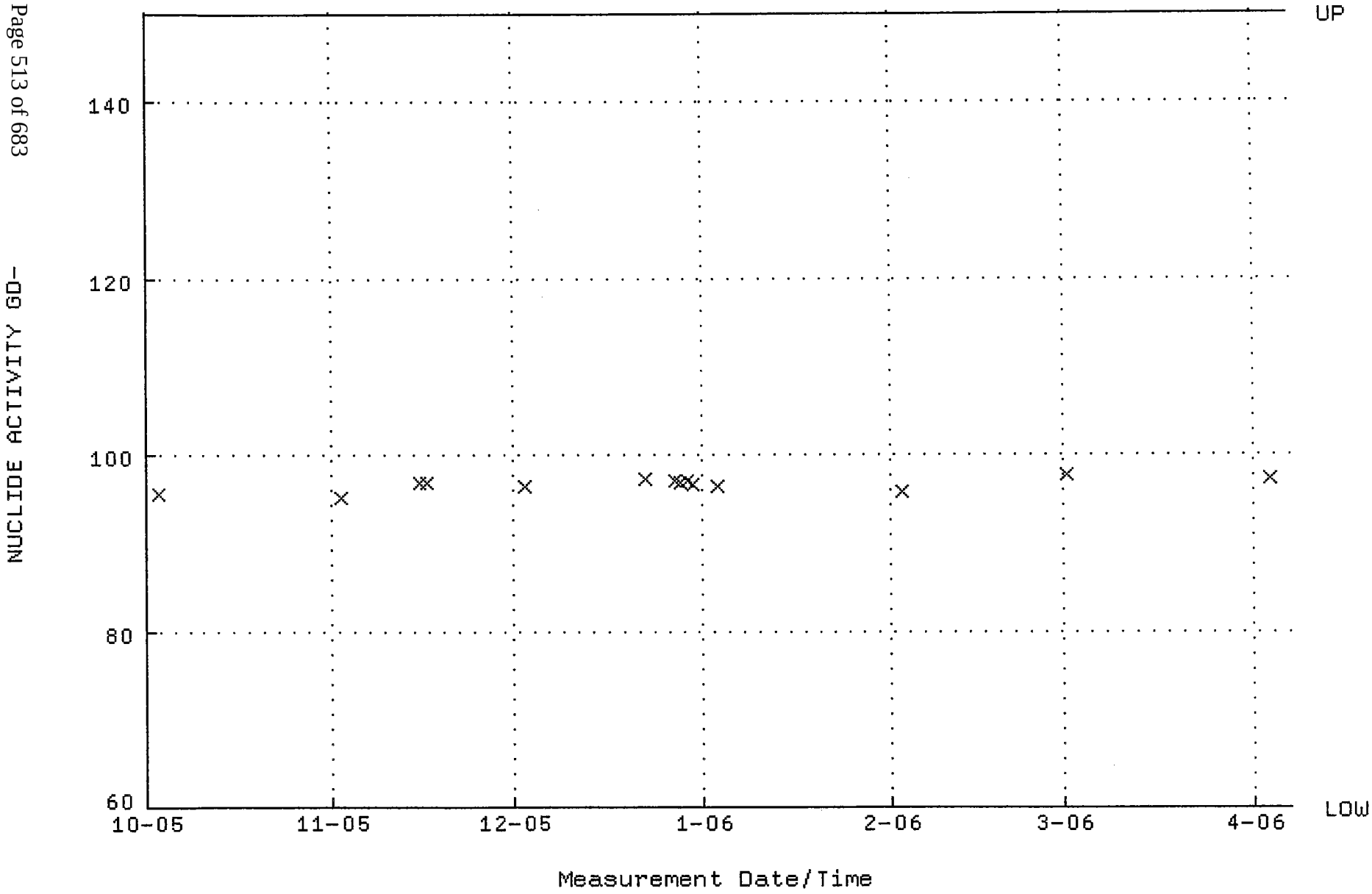
QA filename : DKA100:[ENV_ALPHA.QA.B]B001.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:38 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



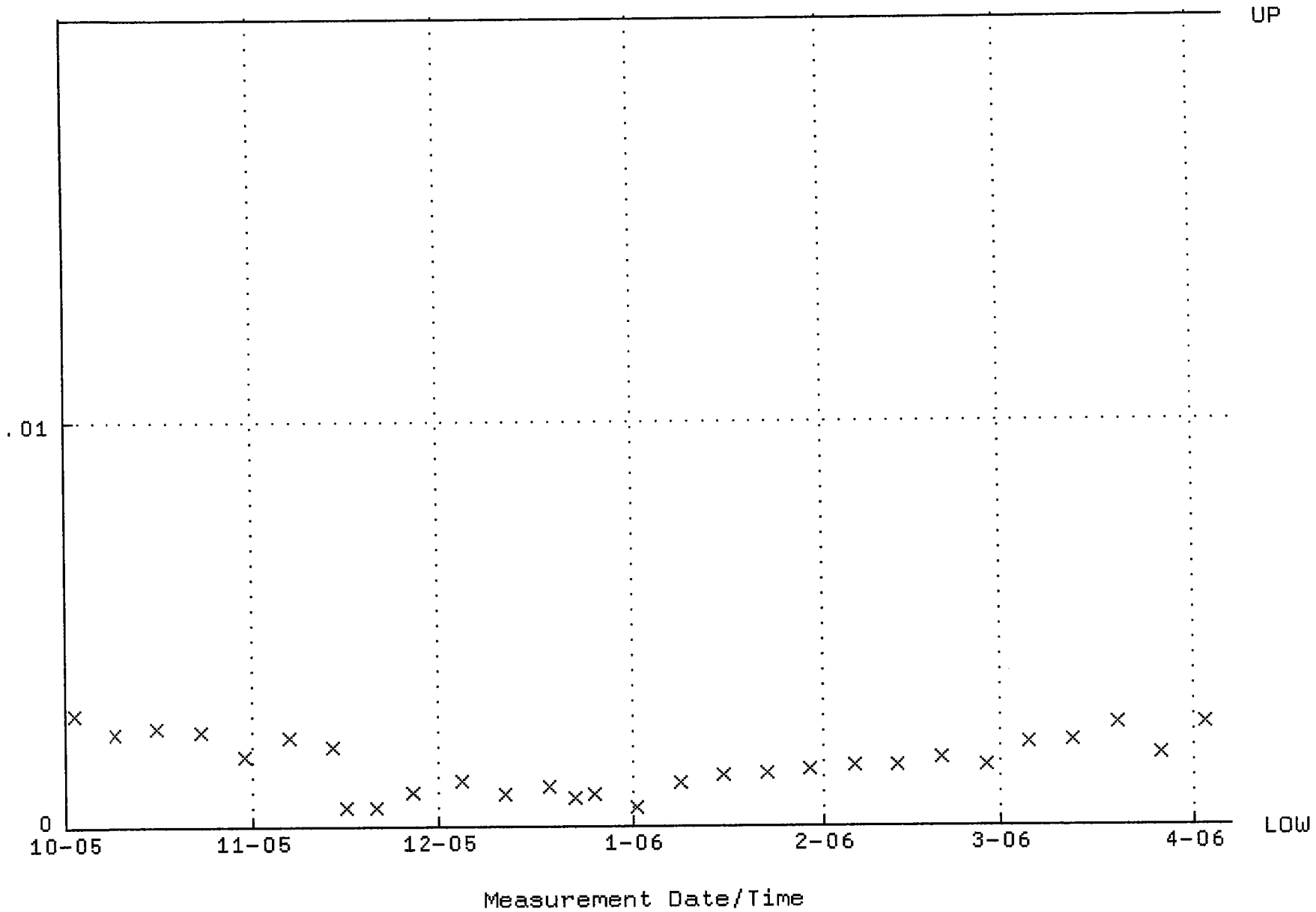
QA filename : DKA100:[ENV_ALPHA.QA.W]W017.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 07:10:41 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



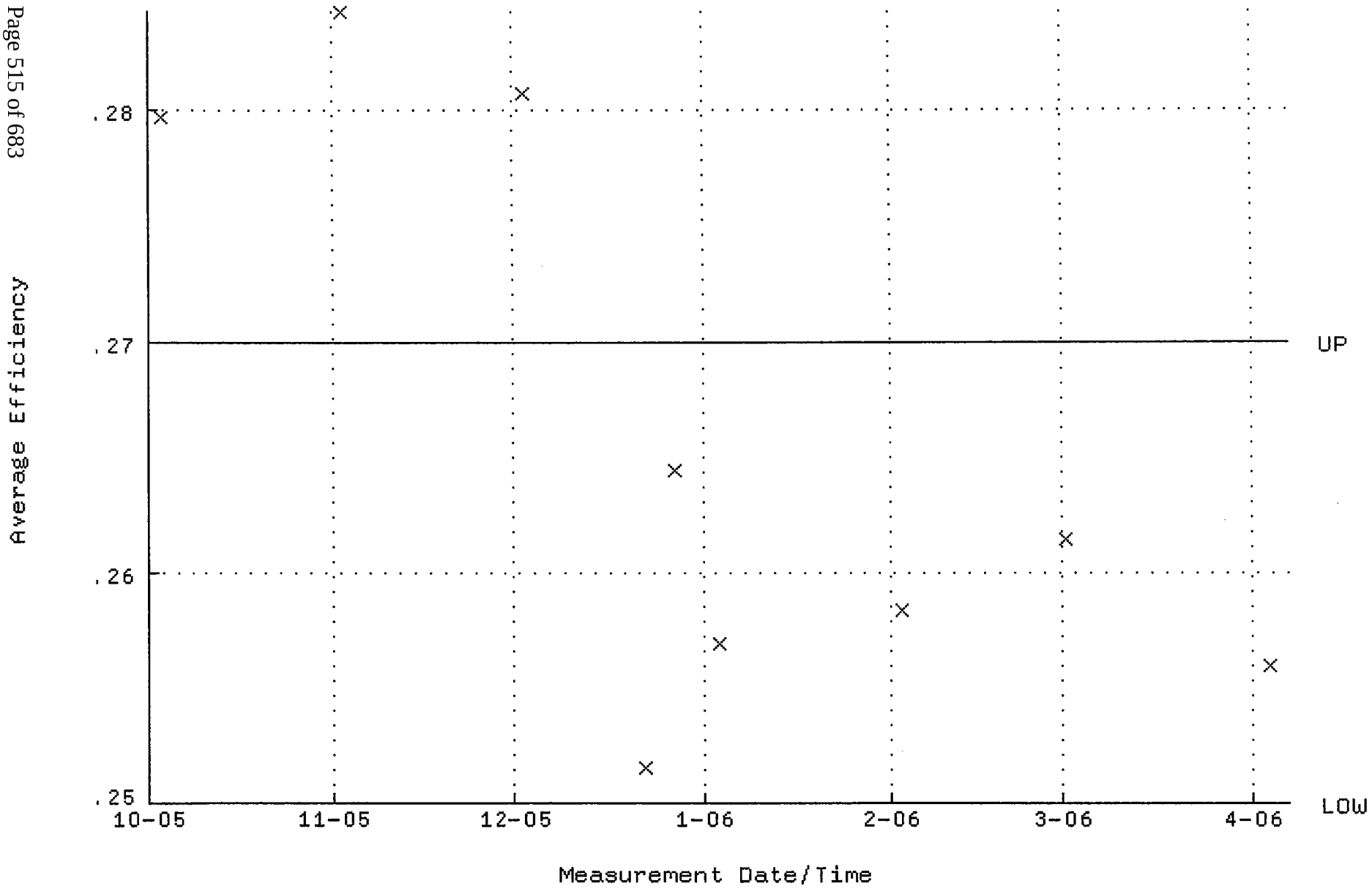
QA filename : DKA100:[ENV_ALPHA.QA.W]W017.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 07:10:41 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



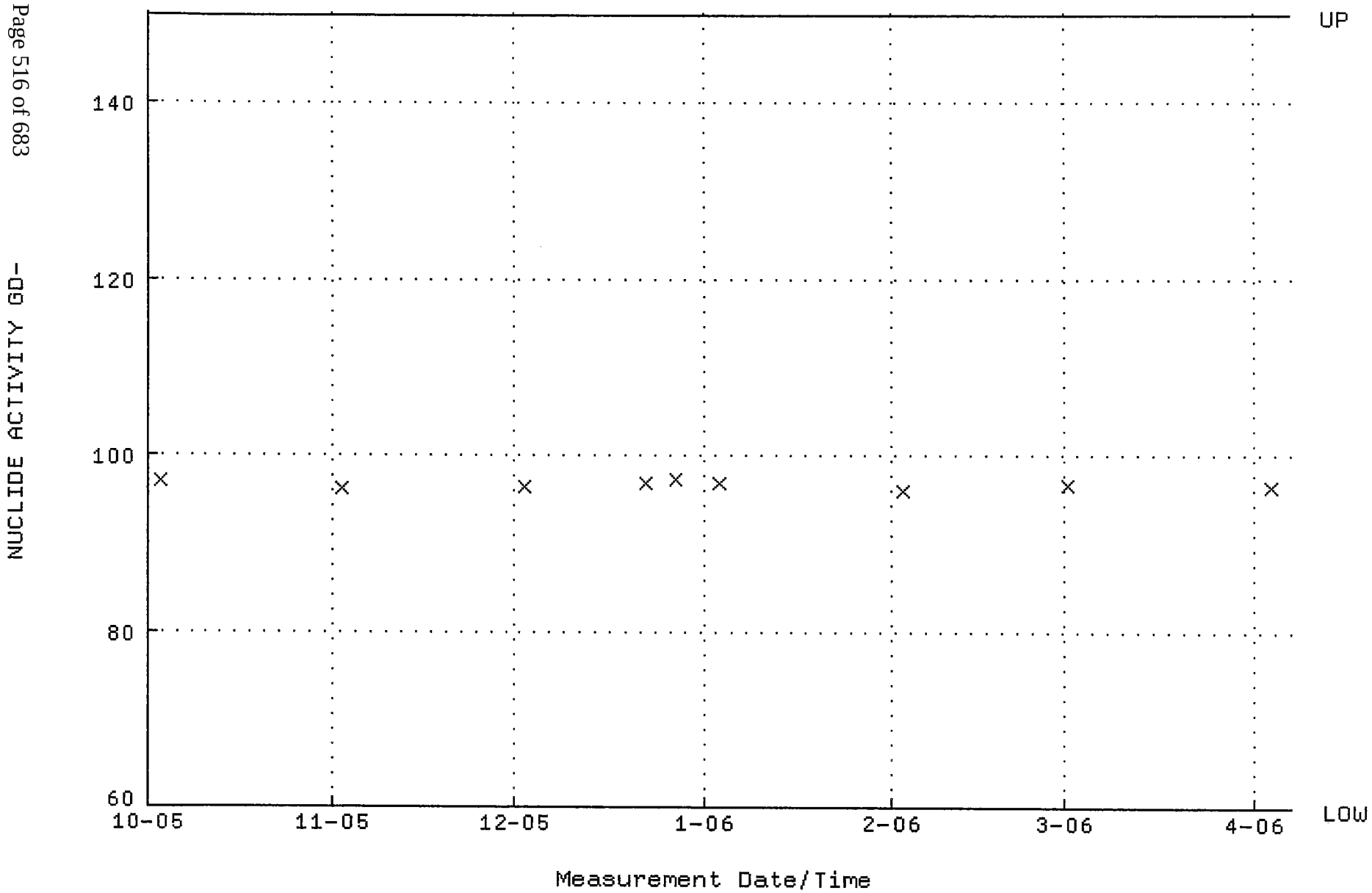
QA filename : DKA100:[ENV_ALPHA.QA.B]B017.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:40 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



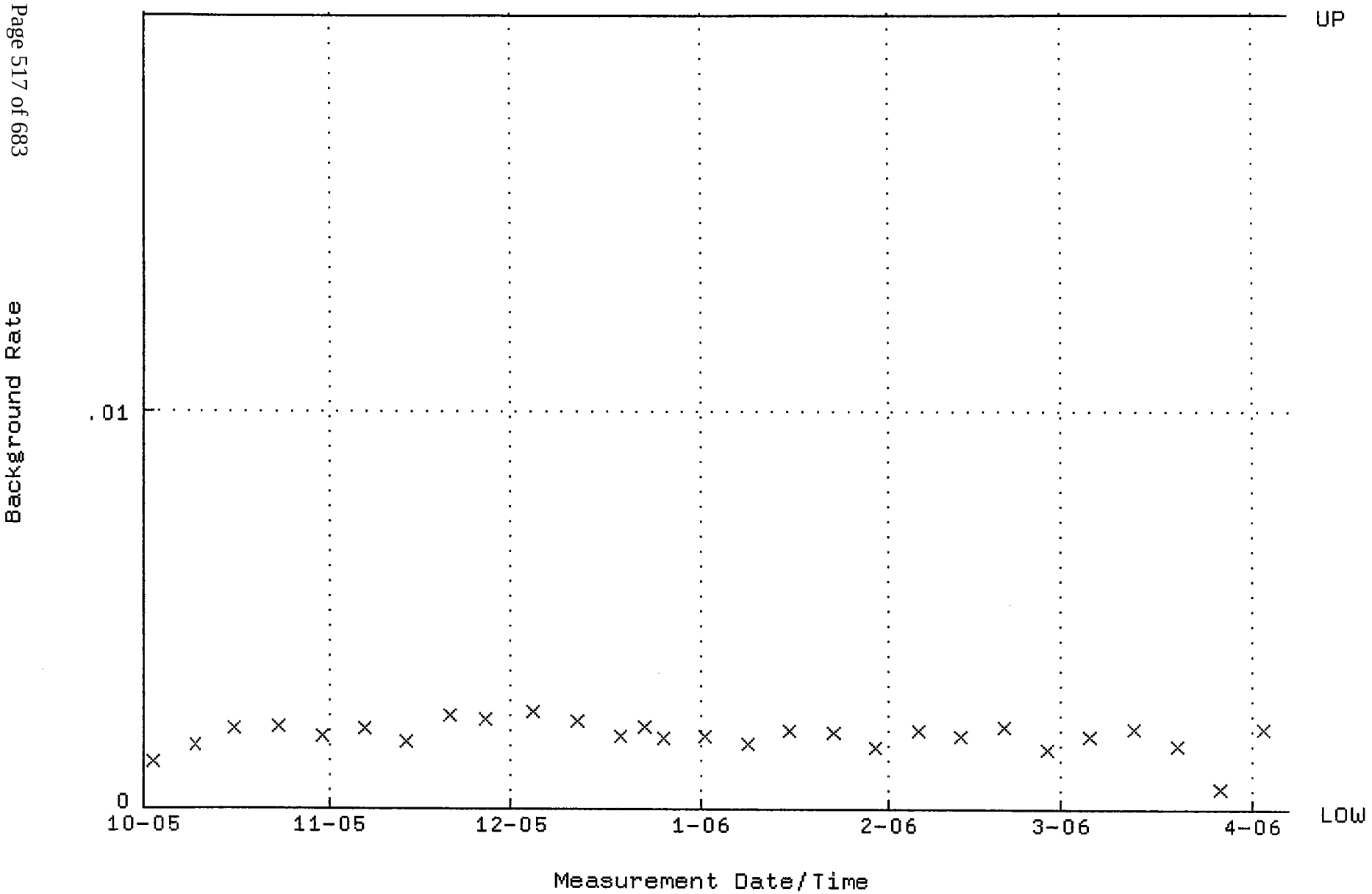
QA filename : DKA100:[ENV_ALPHA.QA.W]W018.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 07:10:41 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.250000 through 0.270000



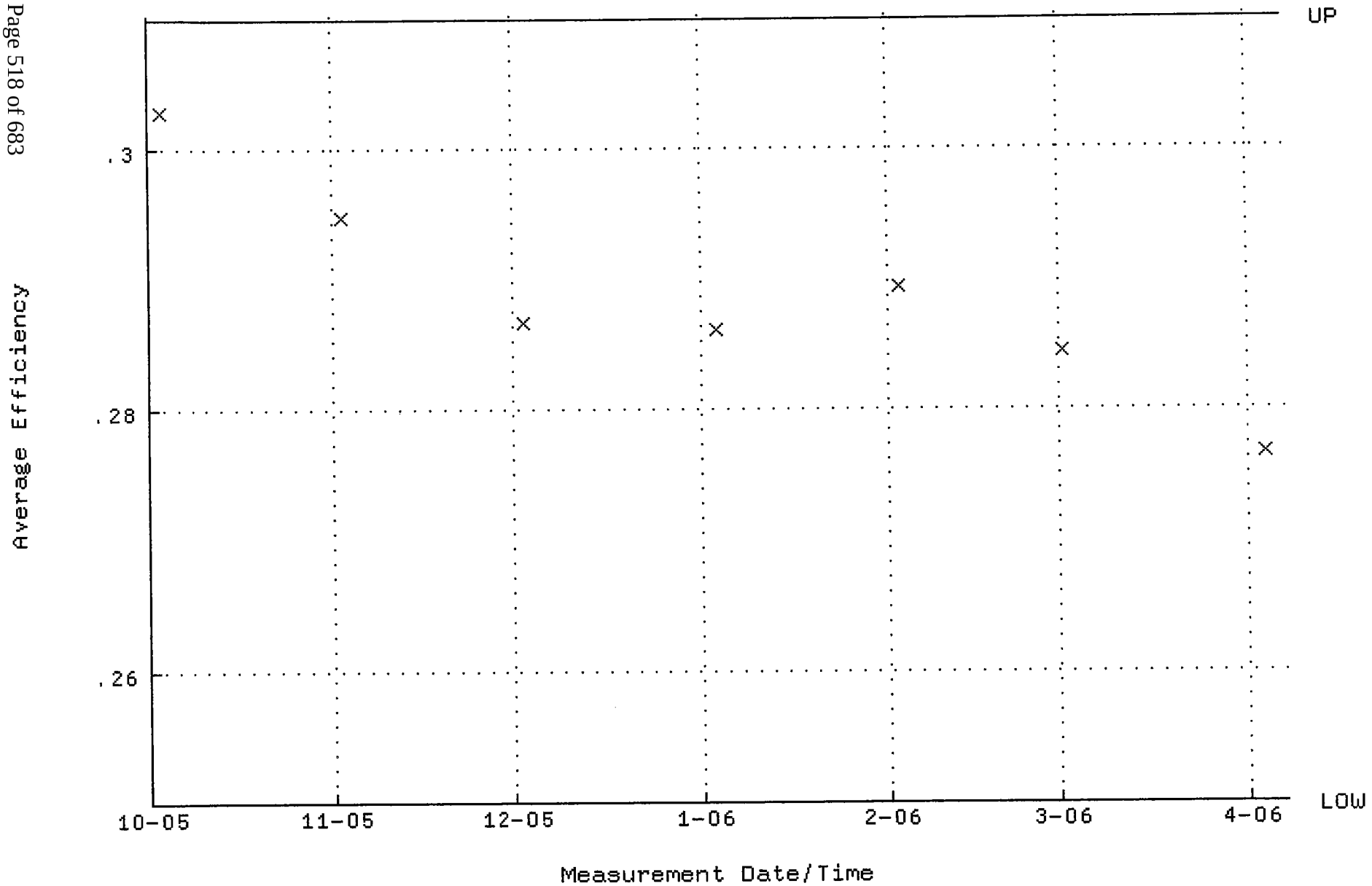
QA filename : DKA100:[ENV_ALPHA.QA.W]W018.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 07:10:41 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



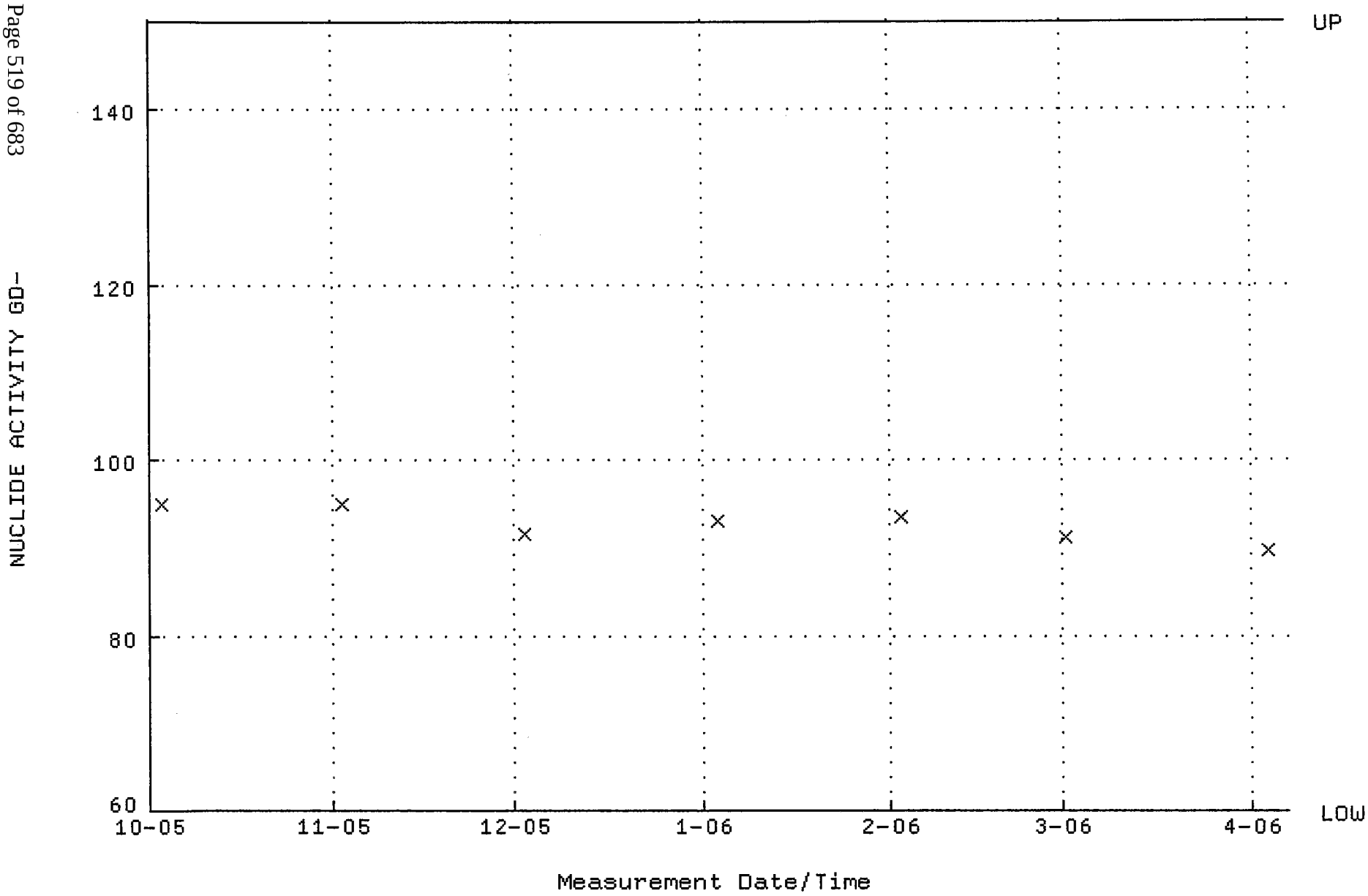
QA filename : DKA100:[ENV_ALPHA.QA.B]B018.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:40 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



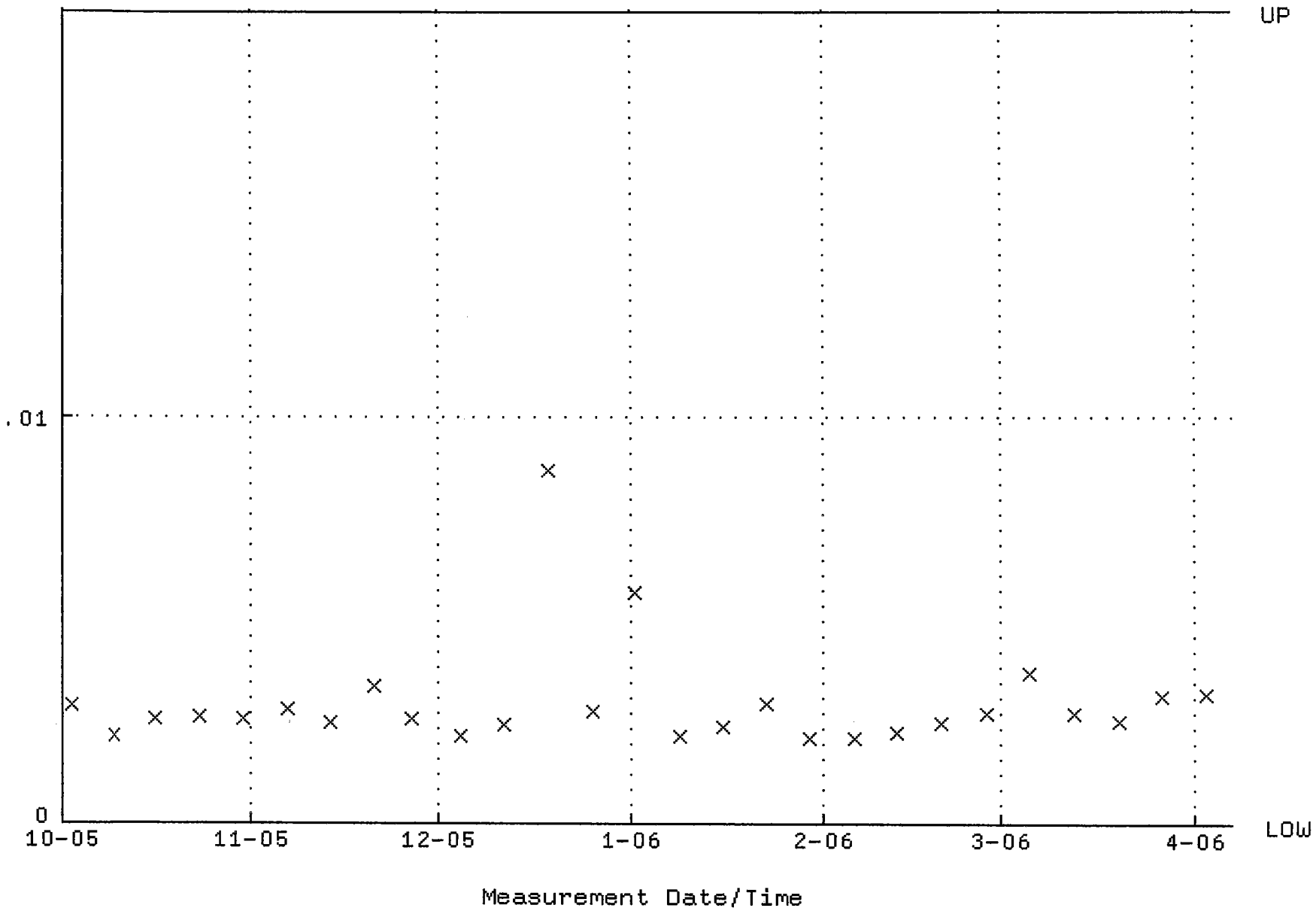
QA filename : DKA100:[ENV_ALPHA.QA.W]W023.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 07:10:43 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.250000 through 0.310000



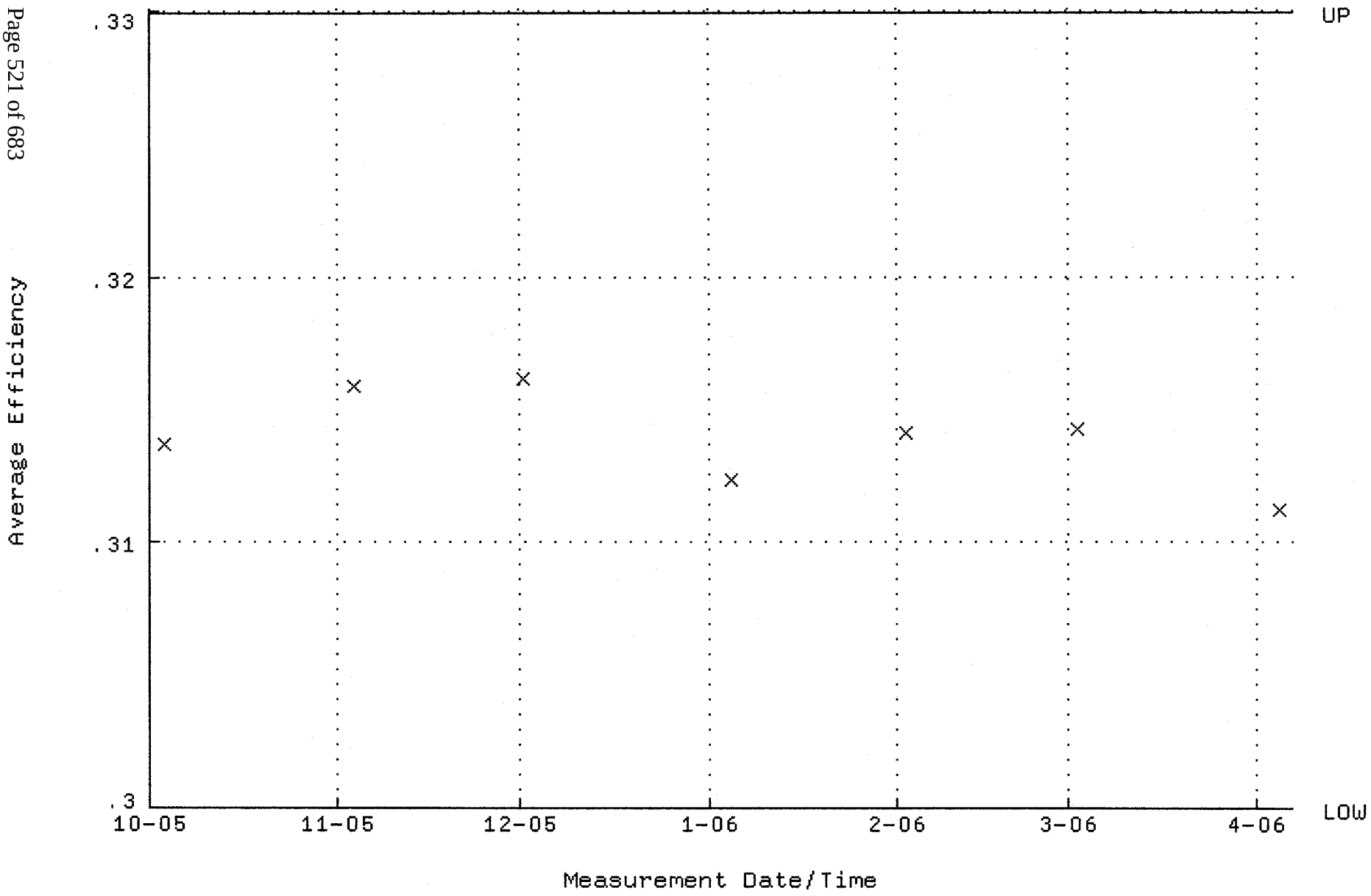
QA filename : DKA100:[ENV_ALPHA.QA.W]W023.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 07:10:43 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



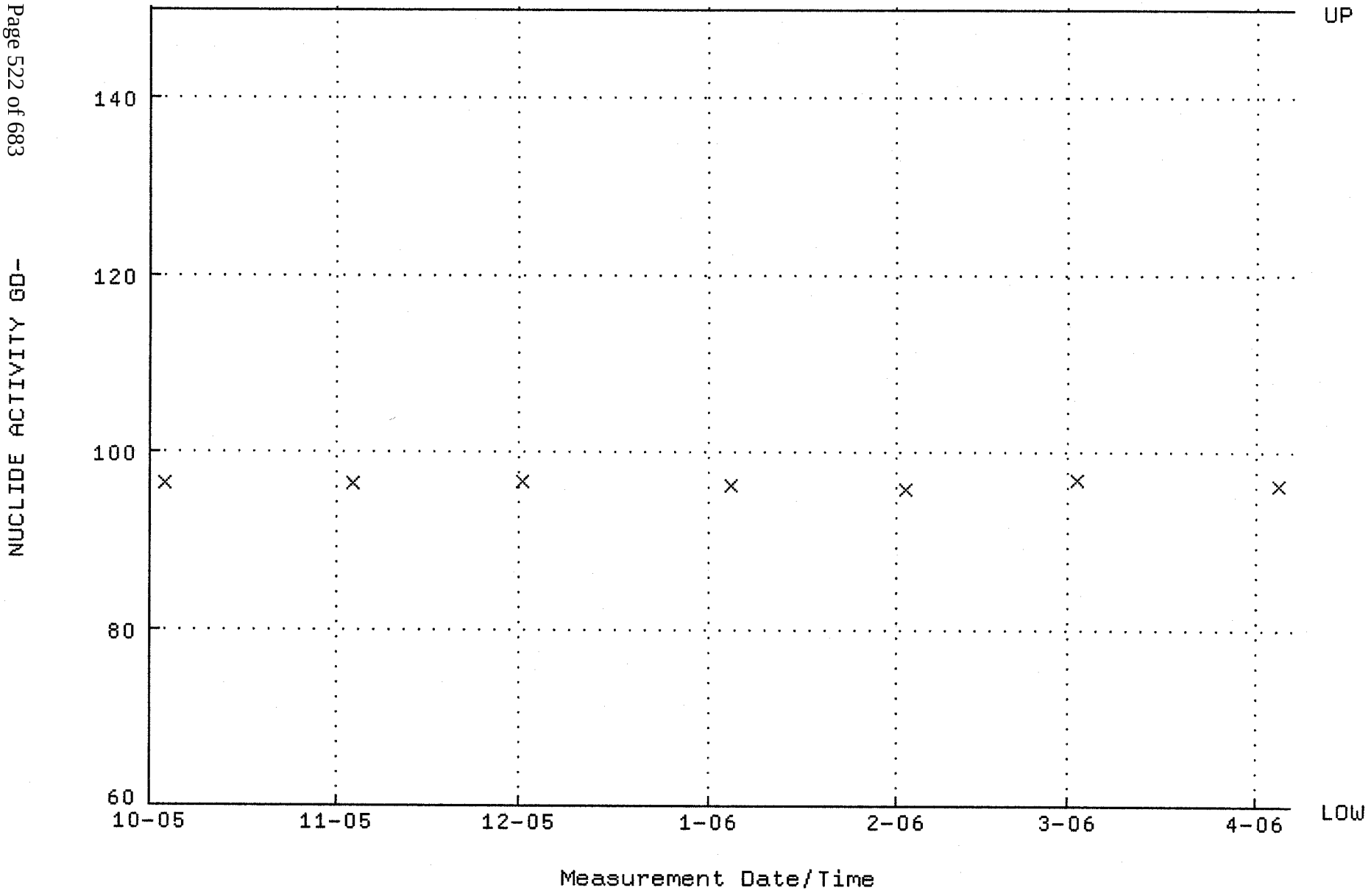
QA filename : DKA100:[ENV_ALPHA.QA.B]B023.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:41 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



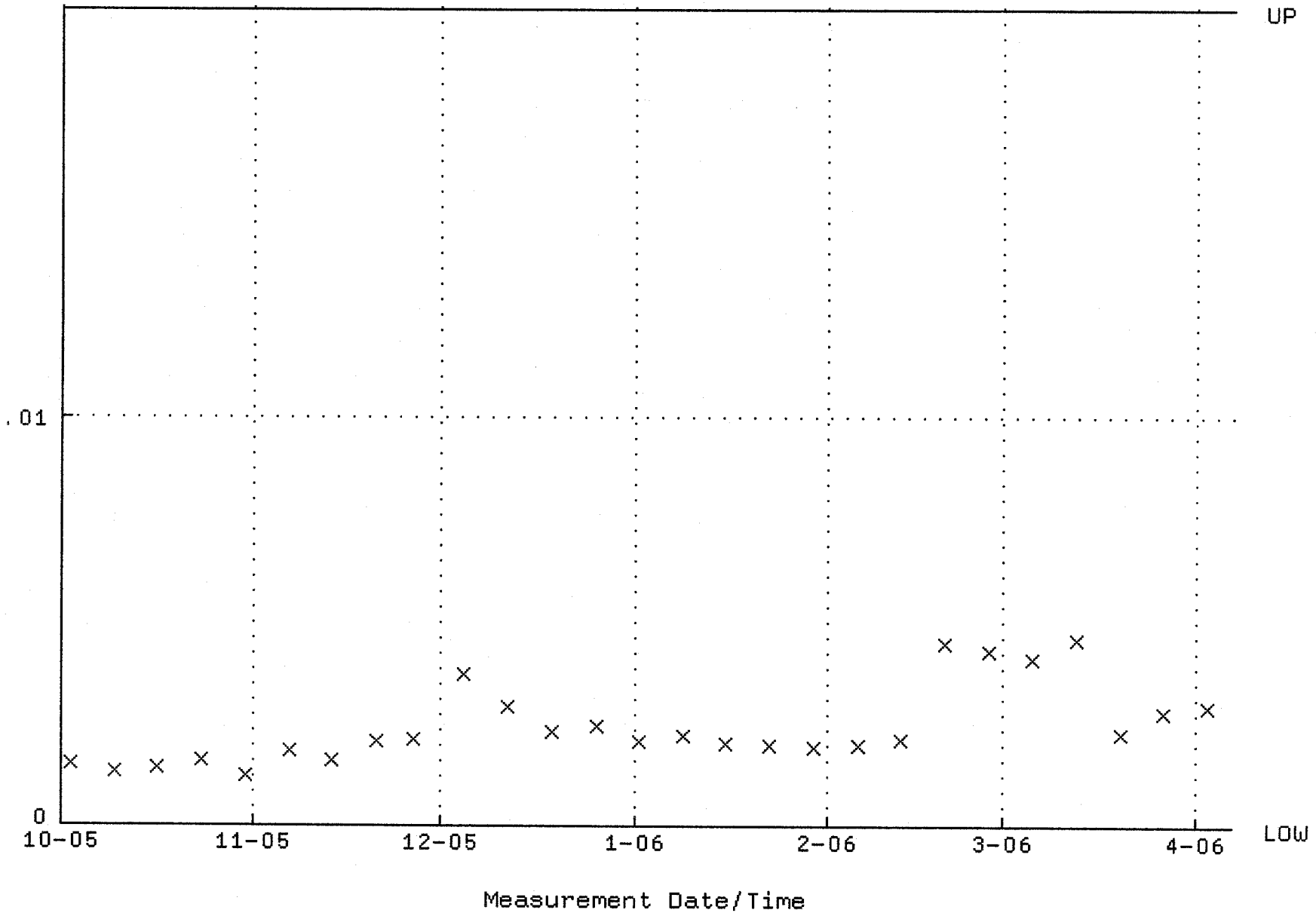
QA filename : DKA100:[ENV_ALPHA.QA.W]W026.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 12:02:07 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.300000 through 0.330000



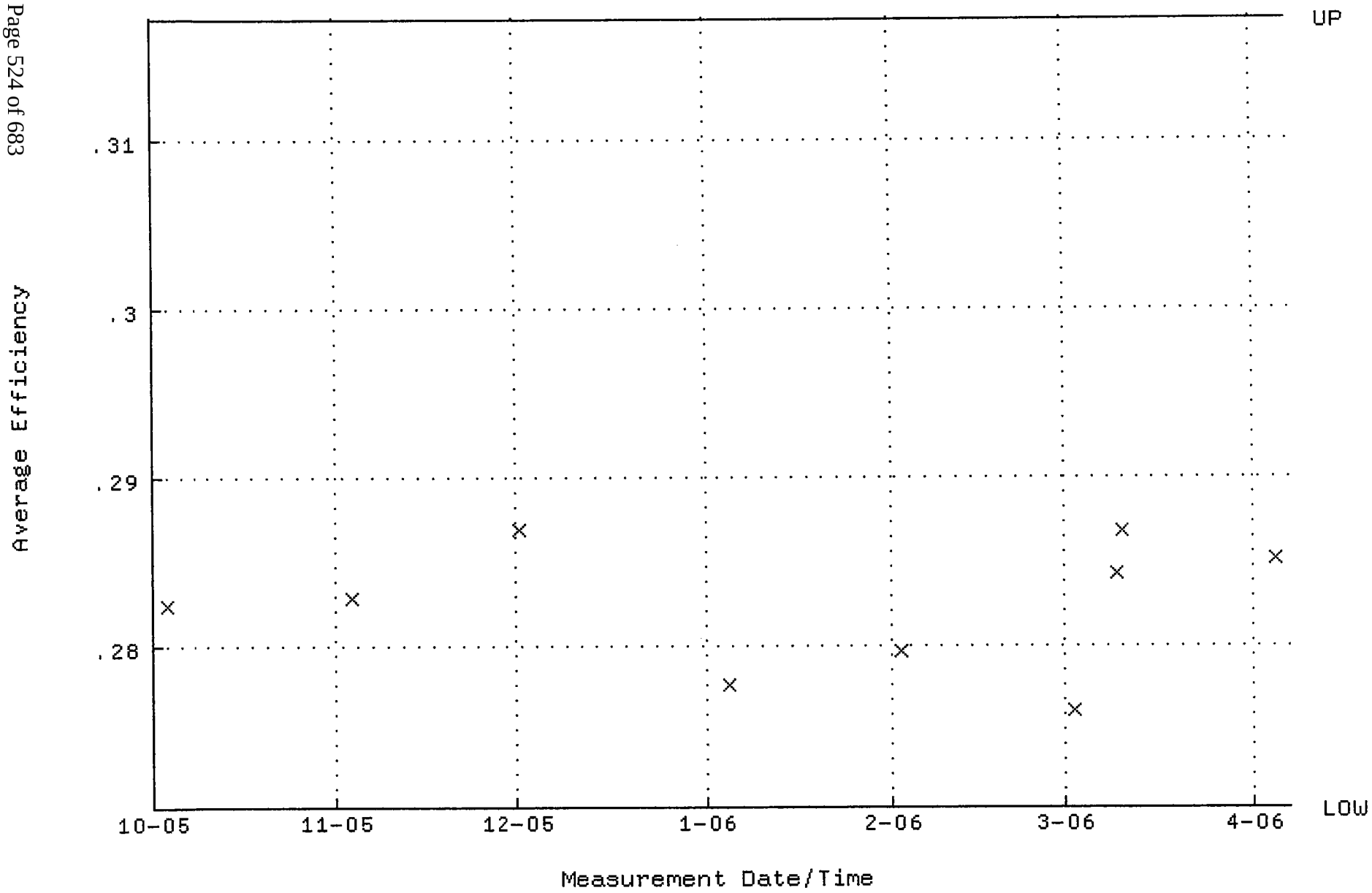
QA filename : DKA100:[ENV_ALPHA.QA.W]W026.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 12:02:07 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



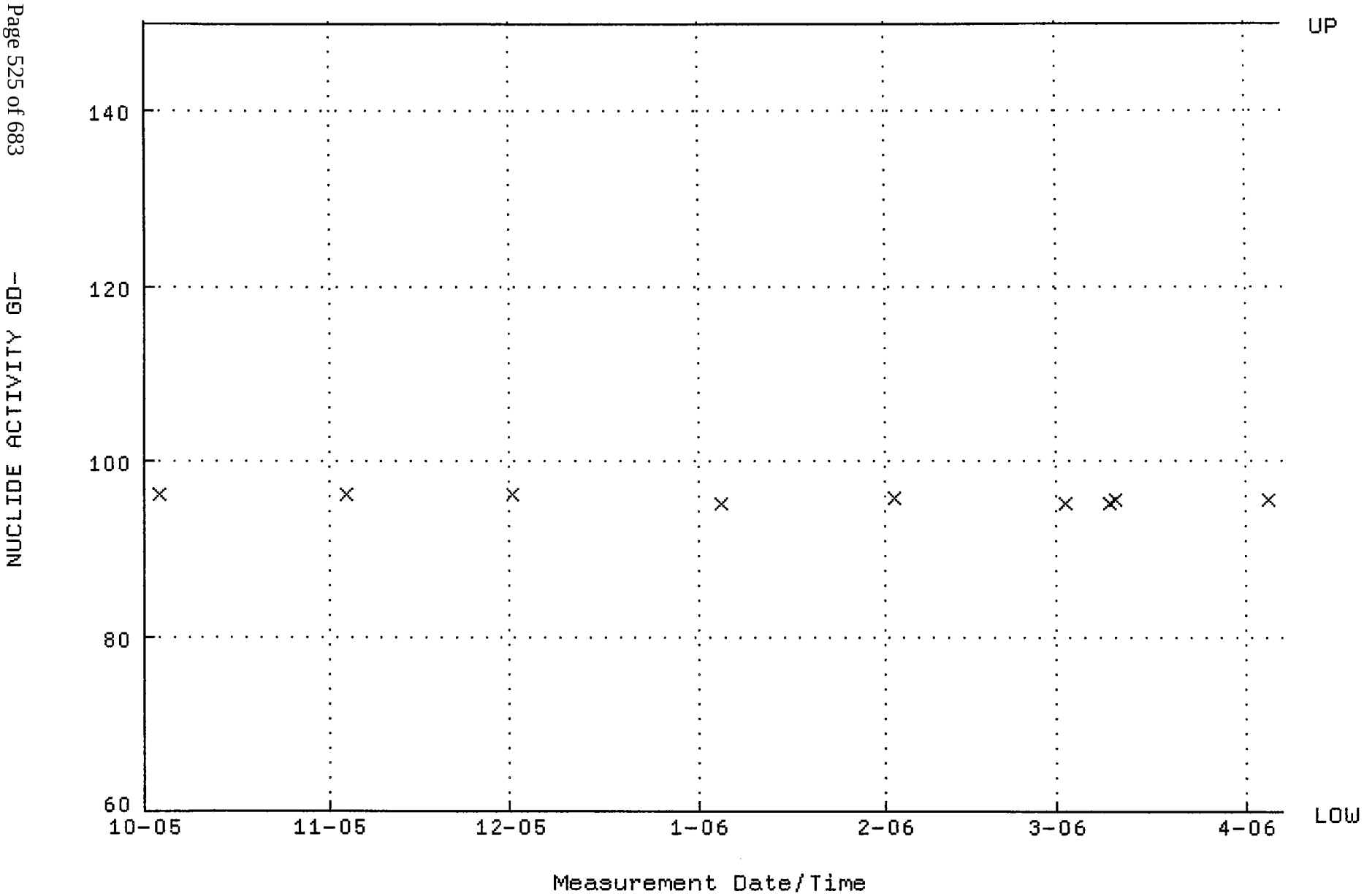
QA filename : DKA100:[ENV_ALPHA.QA.B]B026.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:42 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



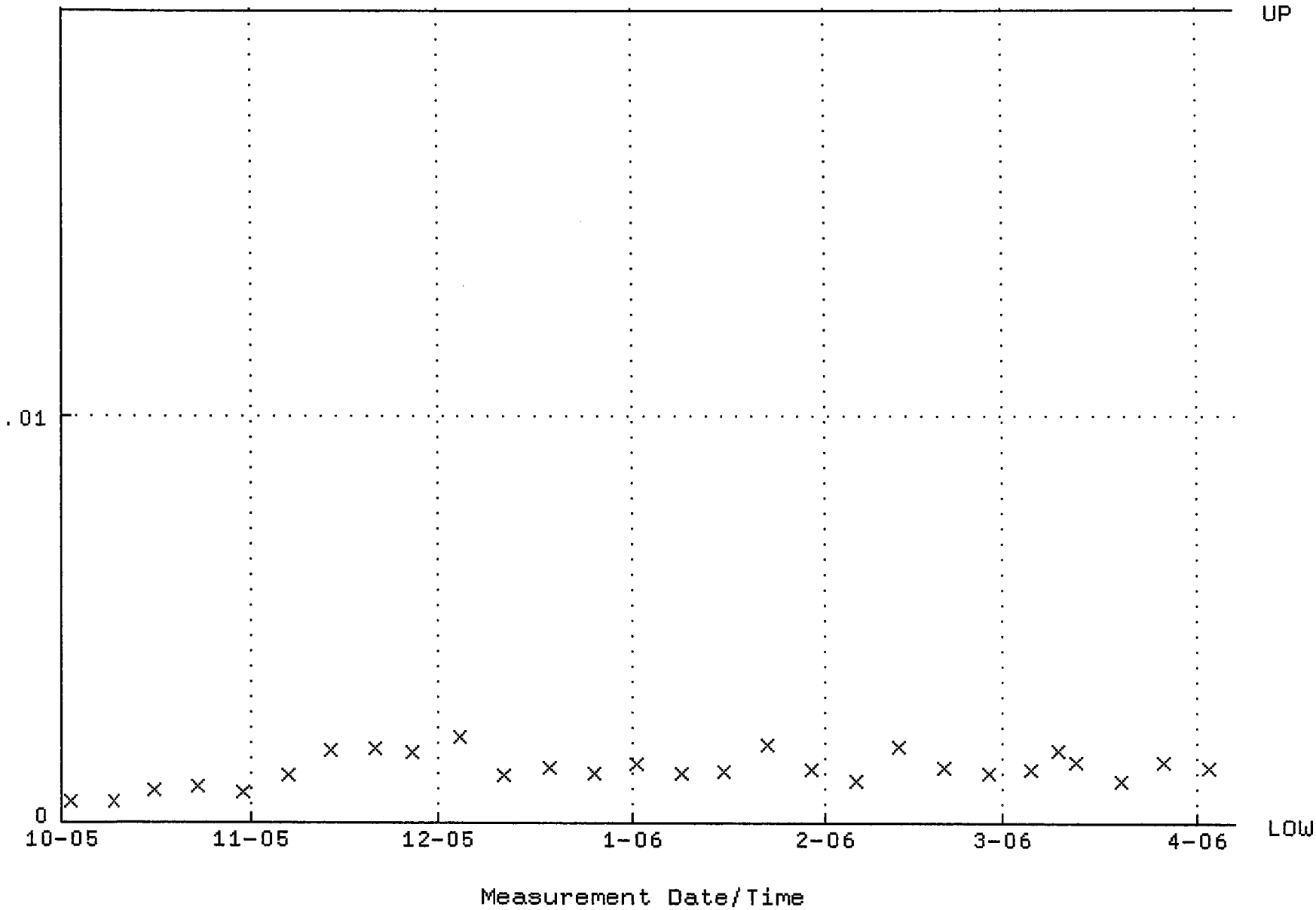
QA filename : DKA100:[ENV_ALPHA.QA.W]W027.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 12:02:07 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.270487 through 0.317113



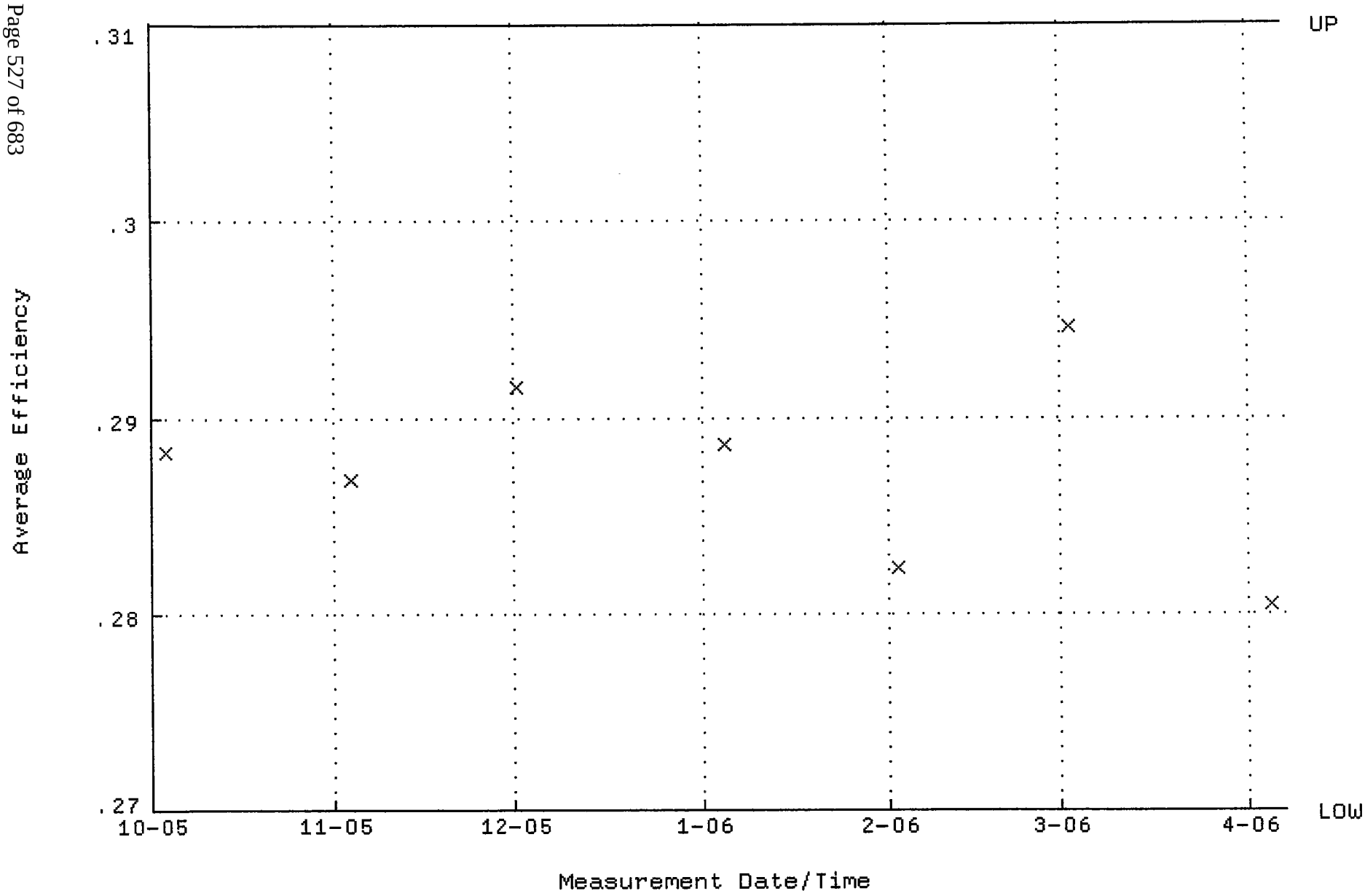
QA filename : DKA100:[ENV_ALPHA.QA.W]W027.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 12:02:07 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



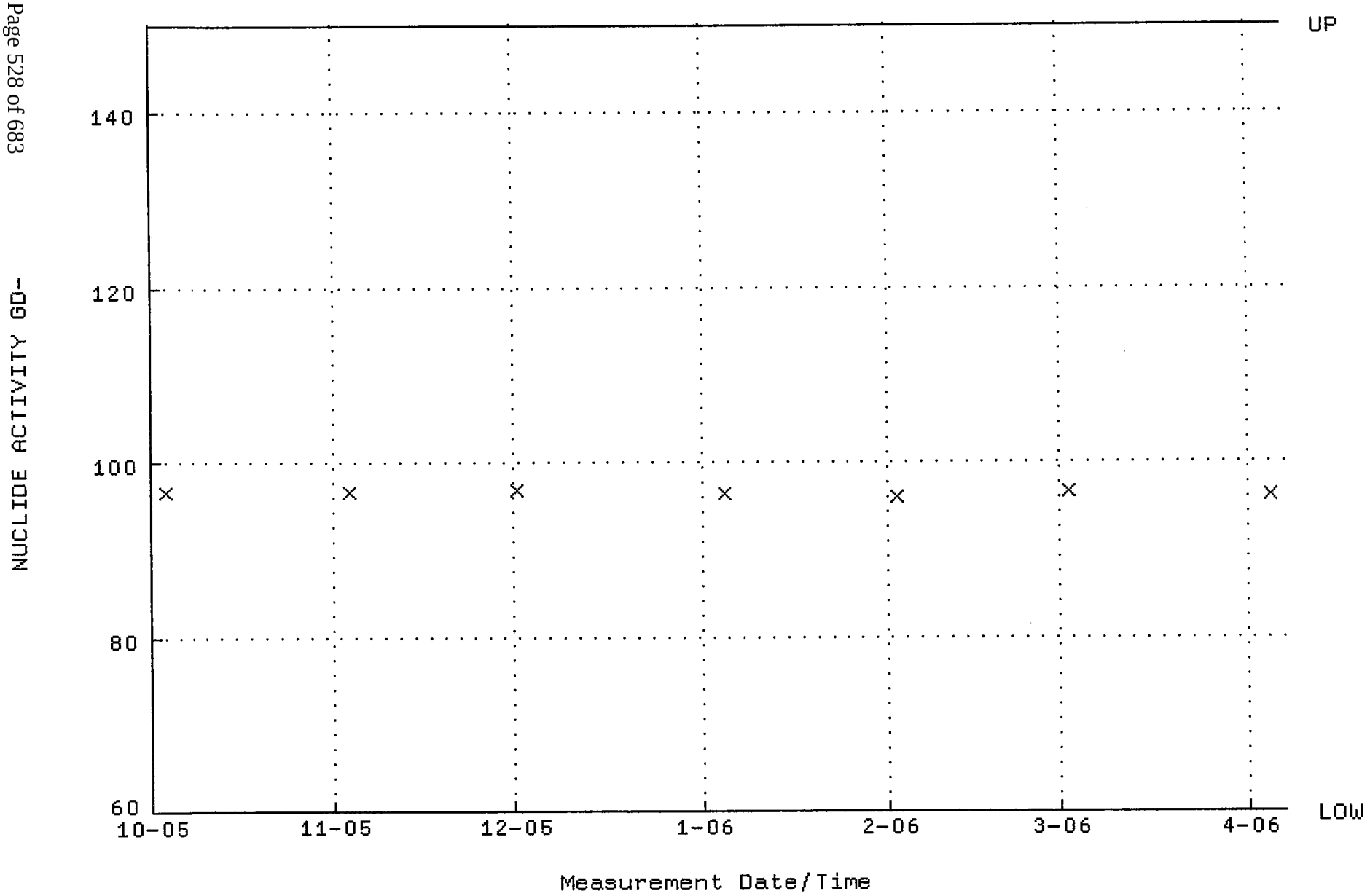
QA filename : DKA100:[ENV_ALPHA.QA.B]B027.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:42 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



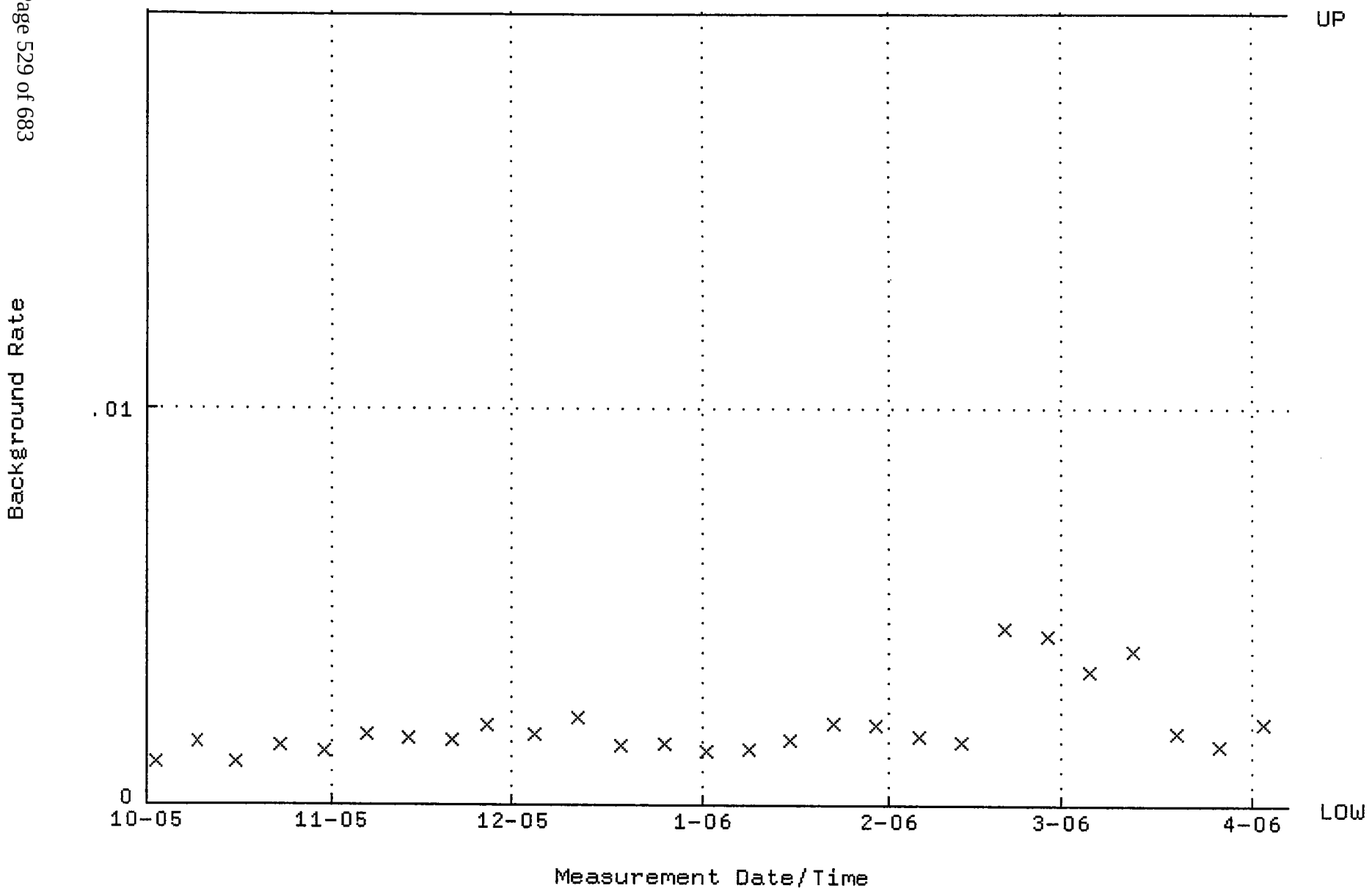
QA filename : DKA100:[ENV_ALPHA.QA.W]W029.QAF;6
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 12:02:07 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.270000 through 0.310000



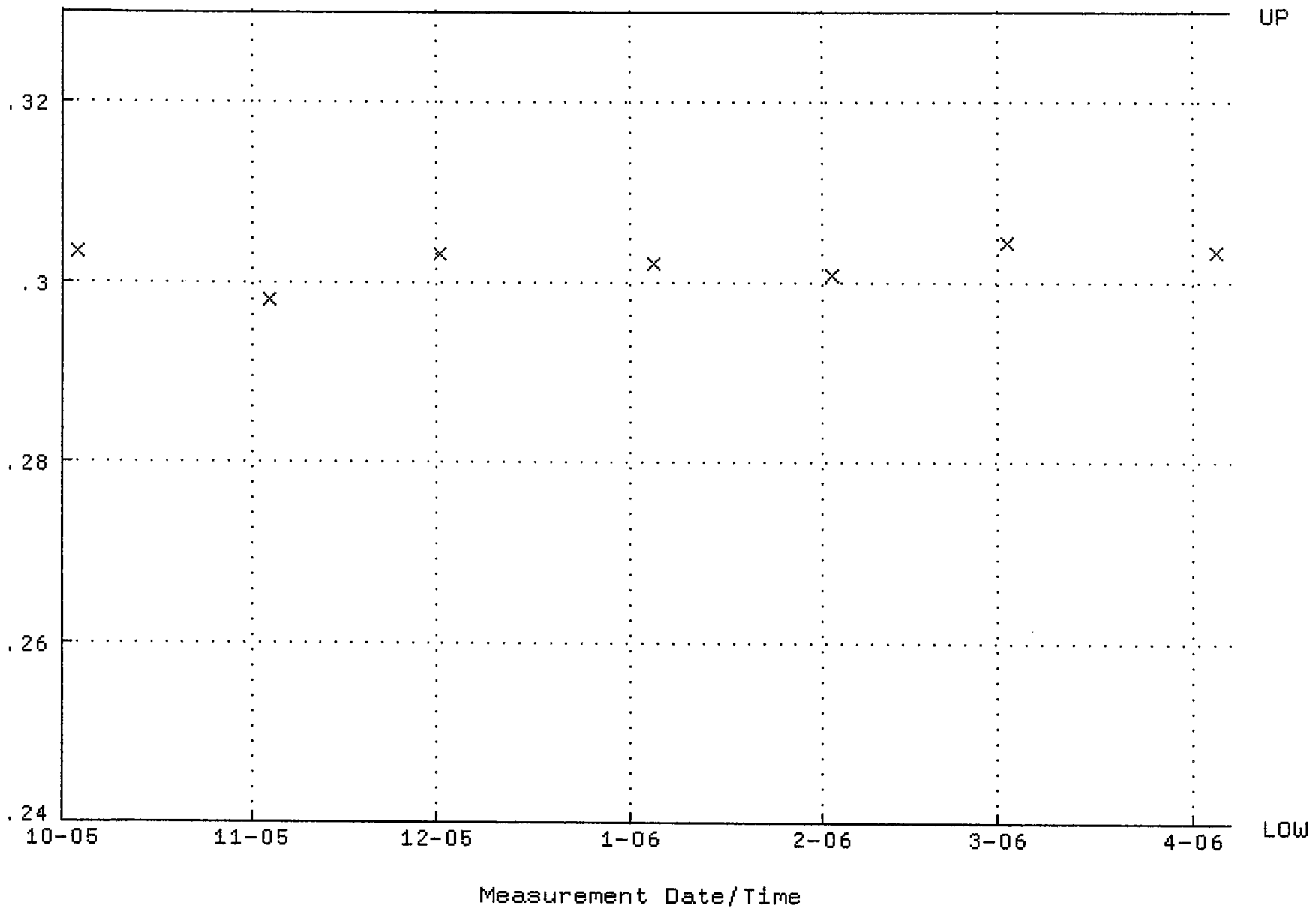
QA filename : DKA100:[ENV_ALPHA.QA.W]W029.QAF;6
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 12:02:07 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



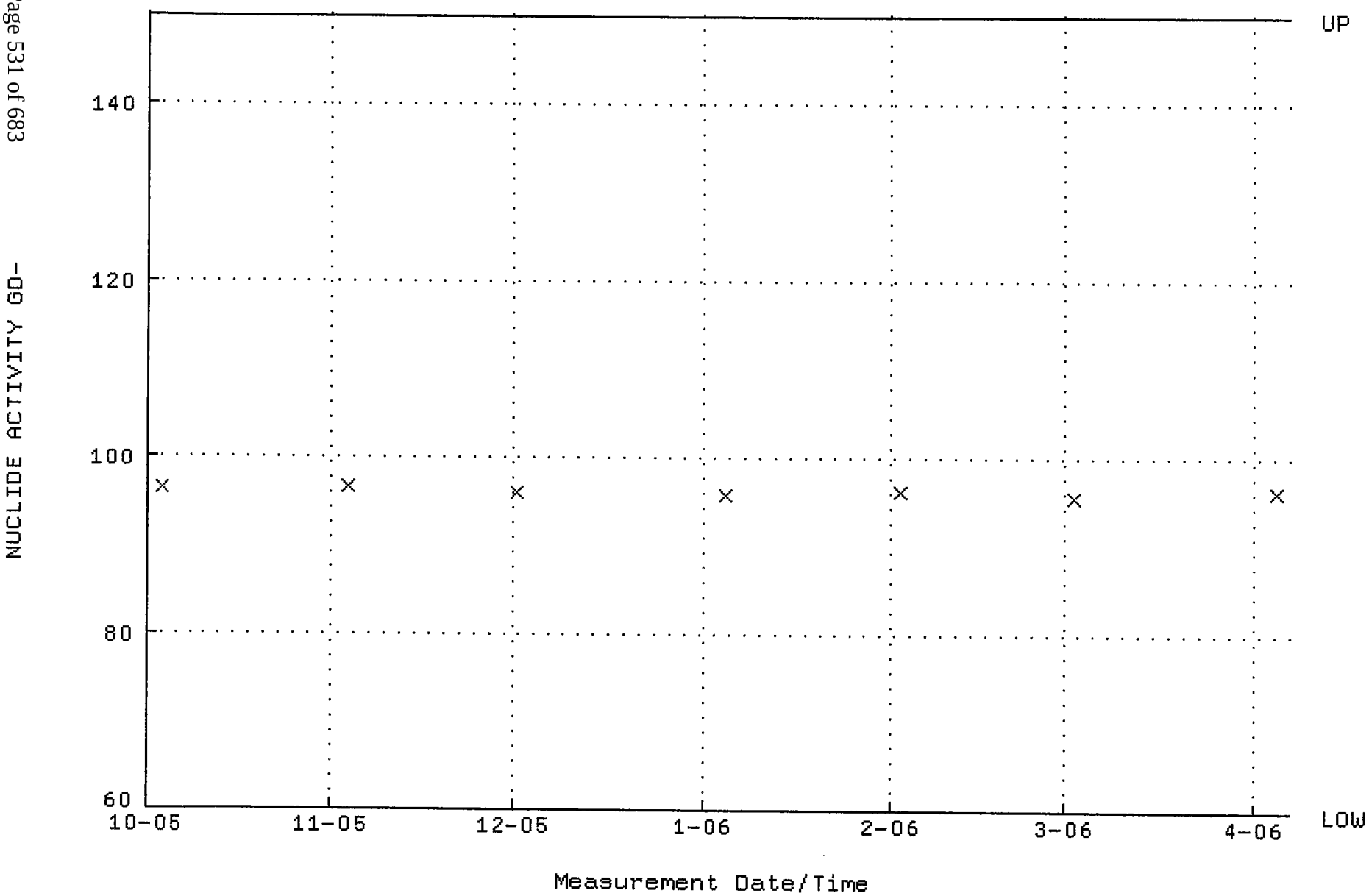
QA filename : DKA100:[ENV_ALPHA.QA.B]B029.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:42 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



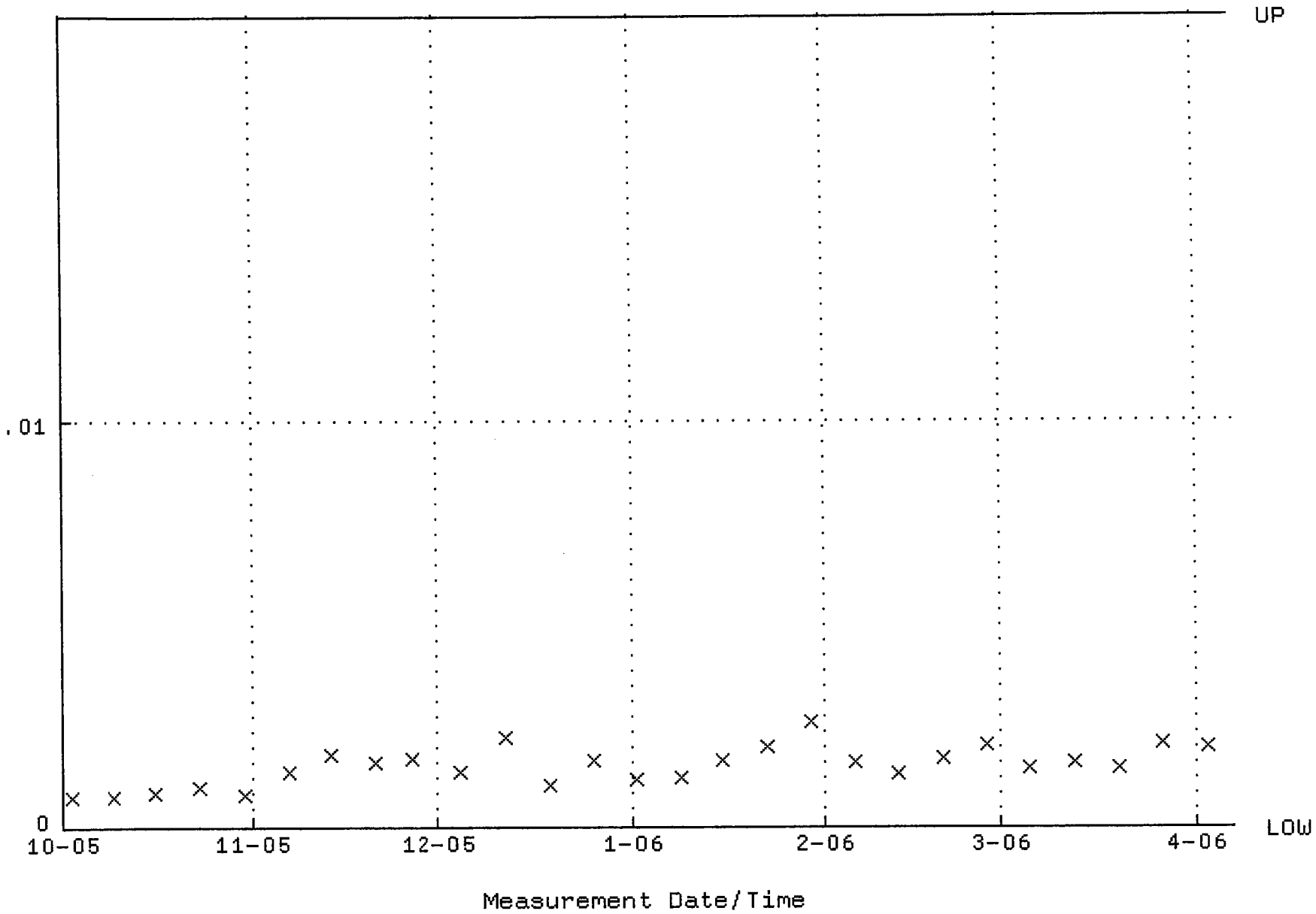
QA filename : DKA100:[ENV_ALPHA.QA.W]W030.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 12:02:07 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.240000 through 0.330000



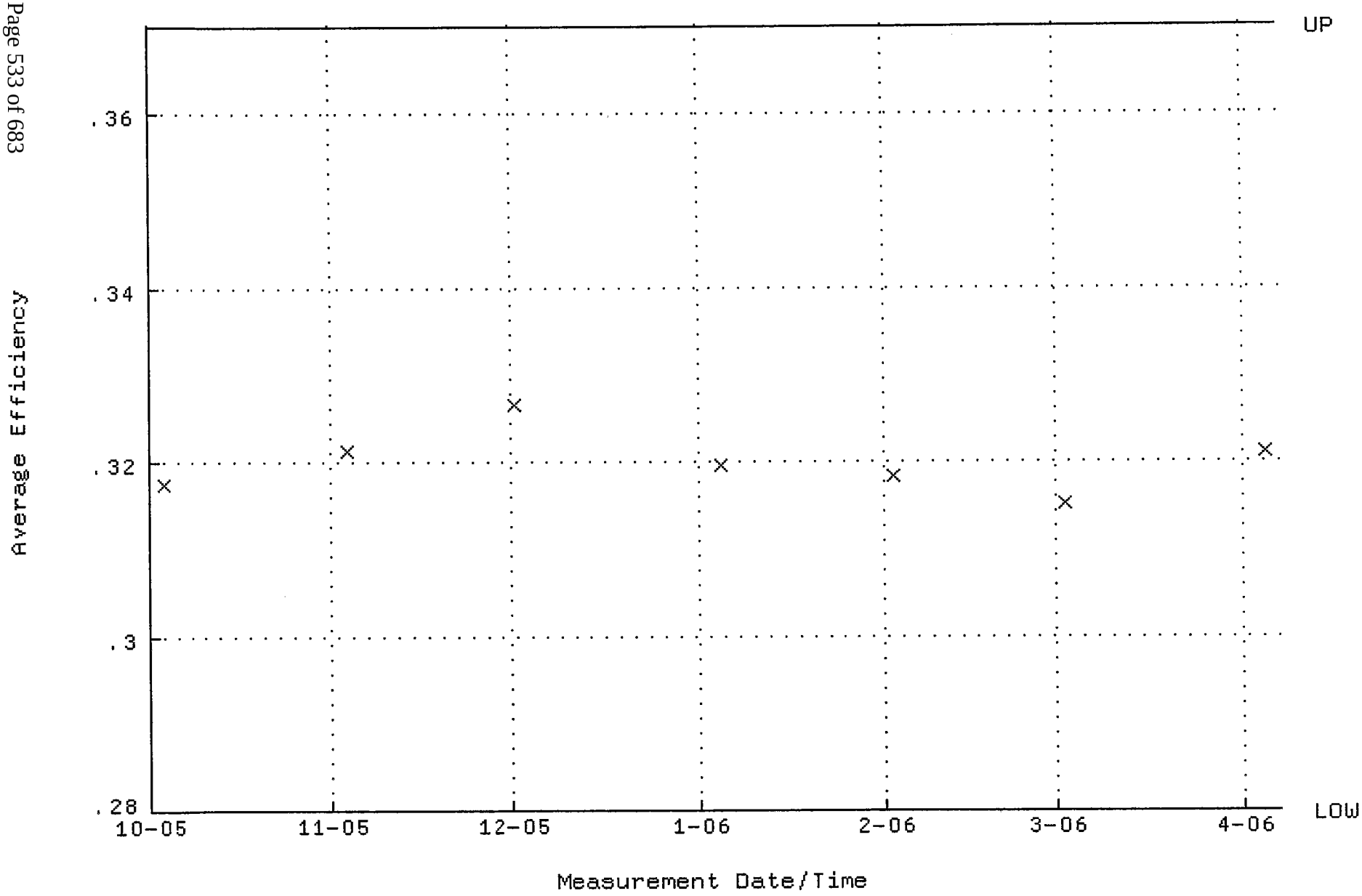
QA filename : DKA100:[ENV_ALPHA.QA.W]W030.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 12:02:07 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



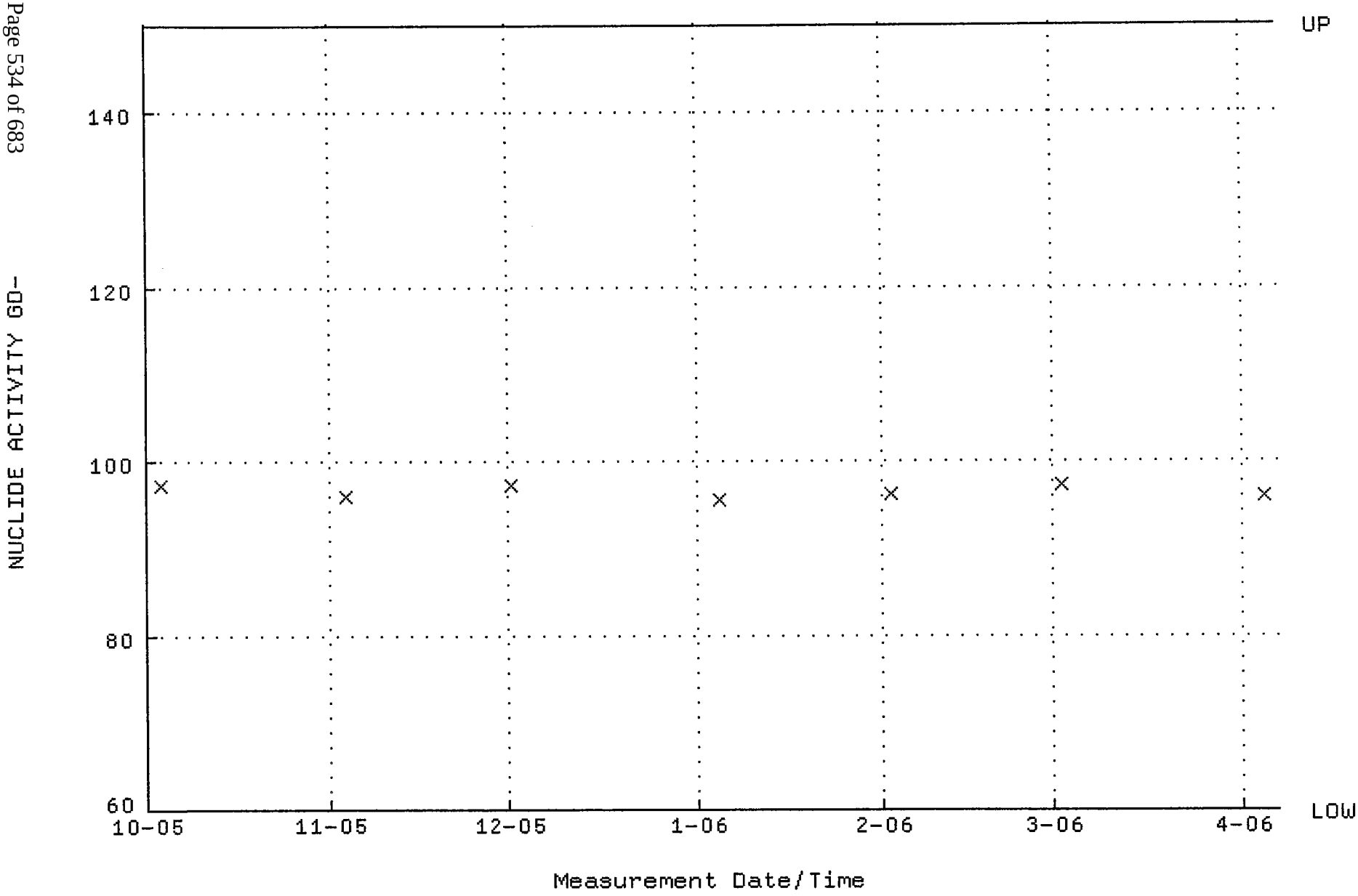
QA filename : DKA100:[ENV_ALPHA.QA.B]B030.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:42 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



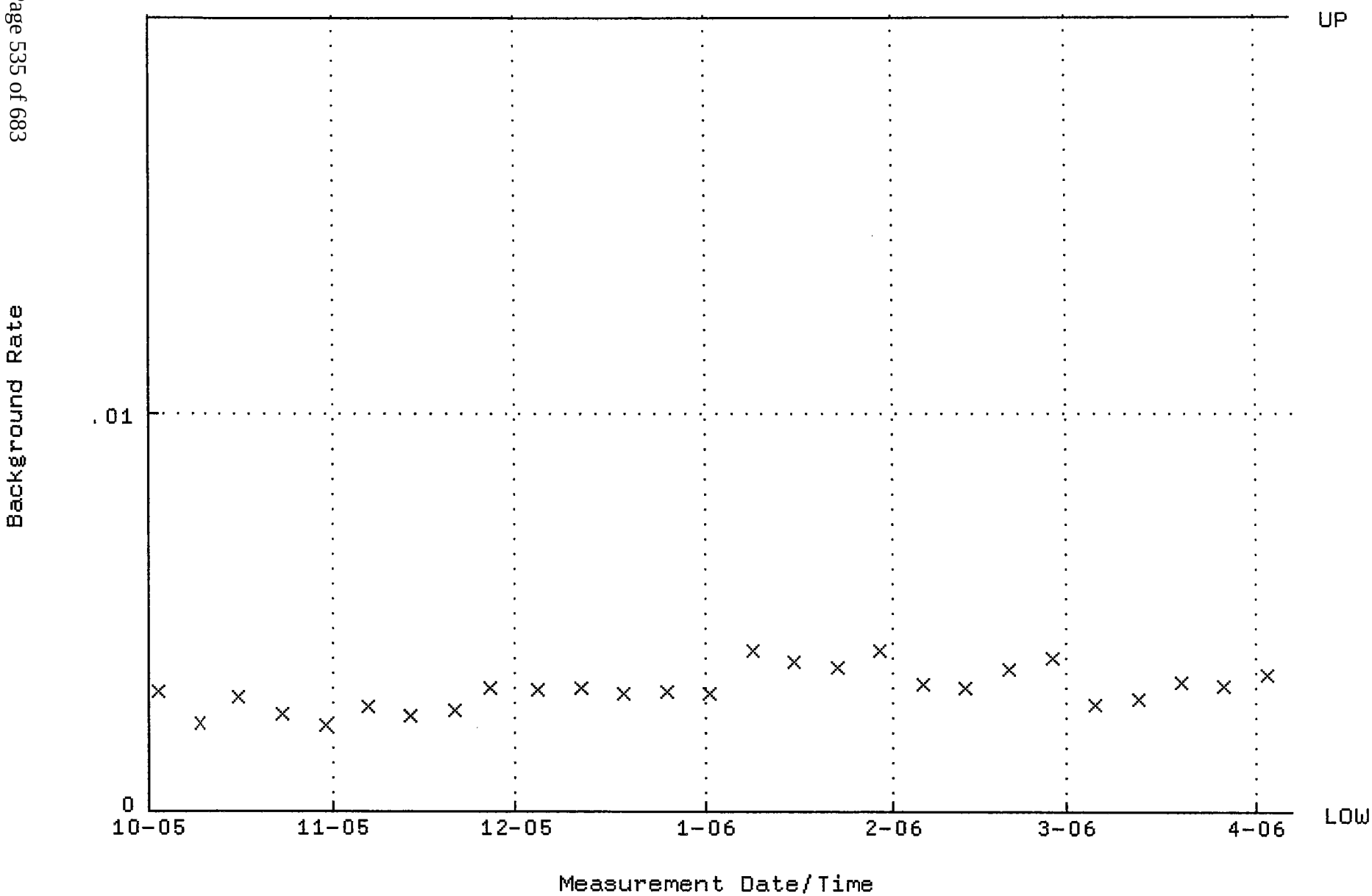
QA filename : DKA100:[ENV_ALPHA.QA.W]W032.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 12:02:09 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



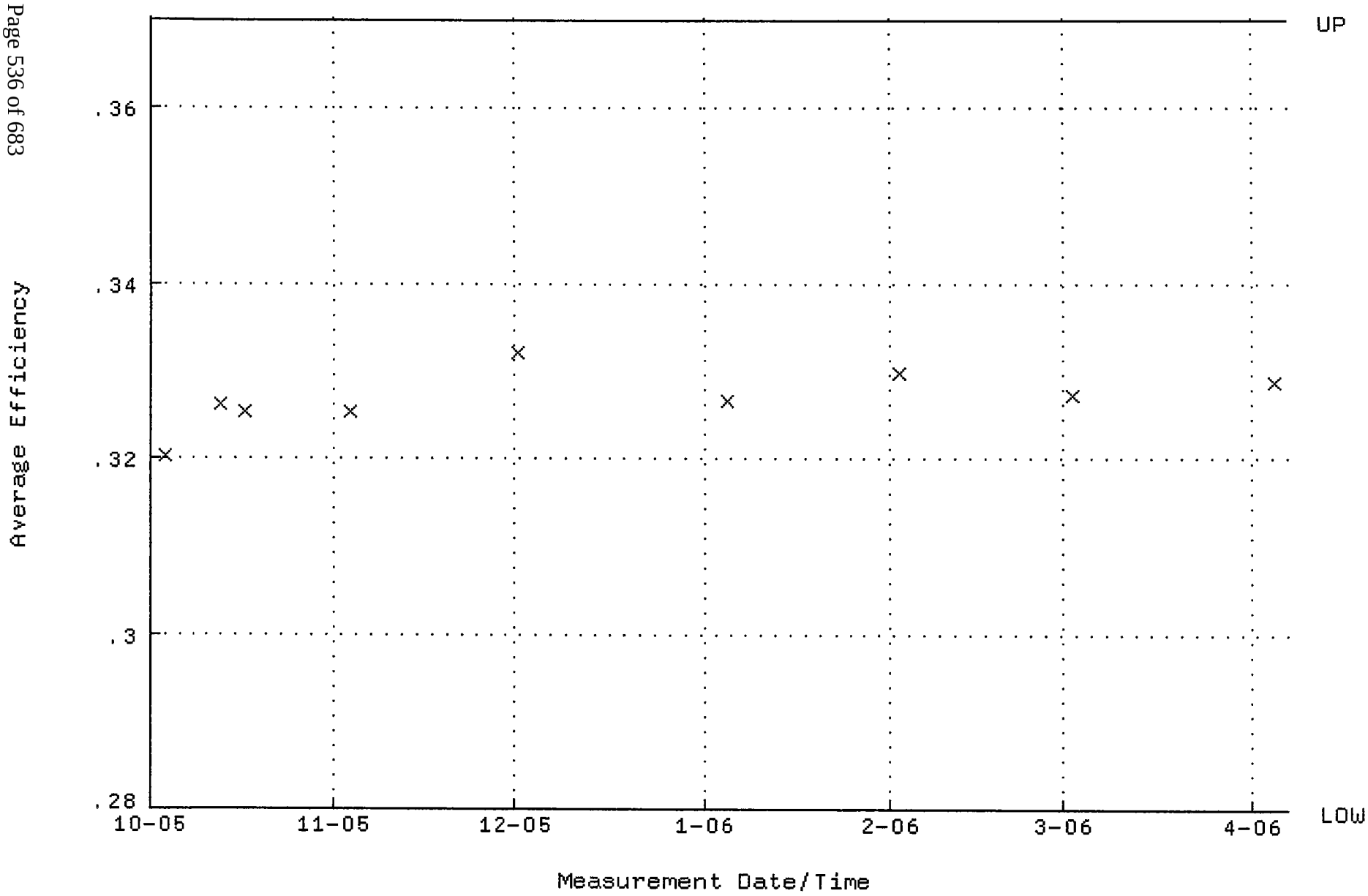
QA filename : DKA100:[ENV_ALPHA.QA.W]W032.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 12:02:09 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



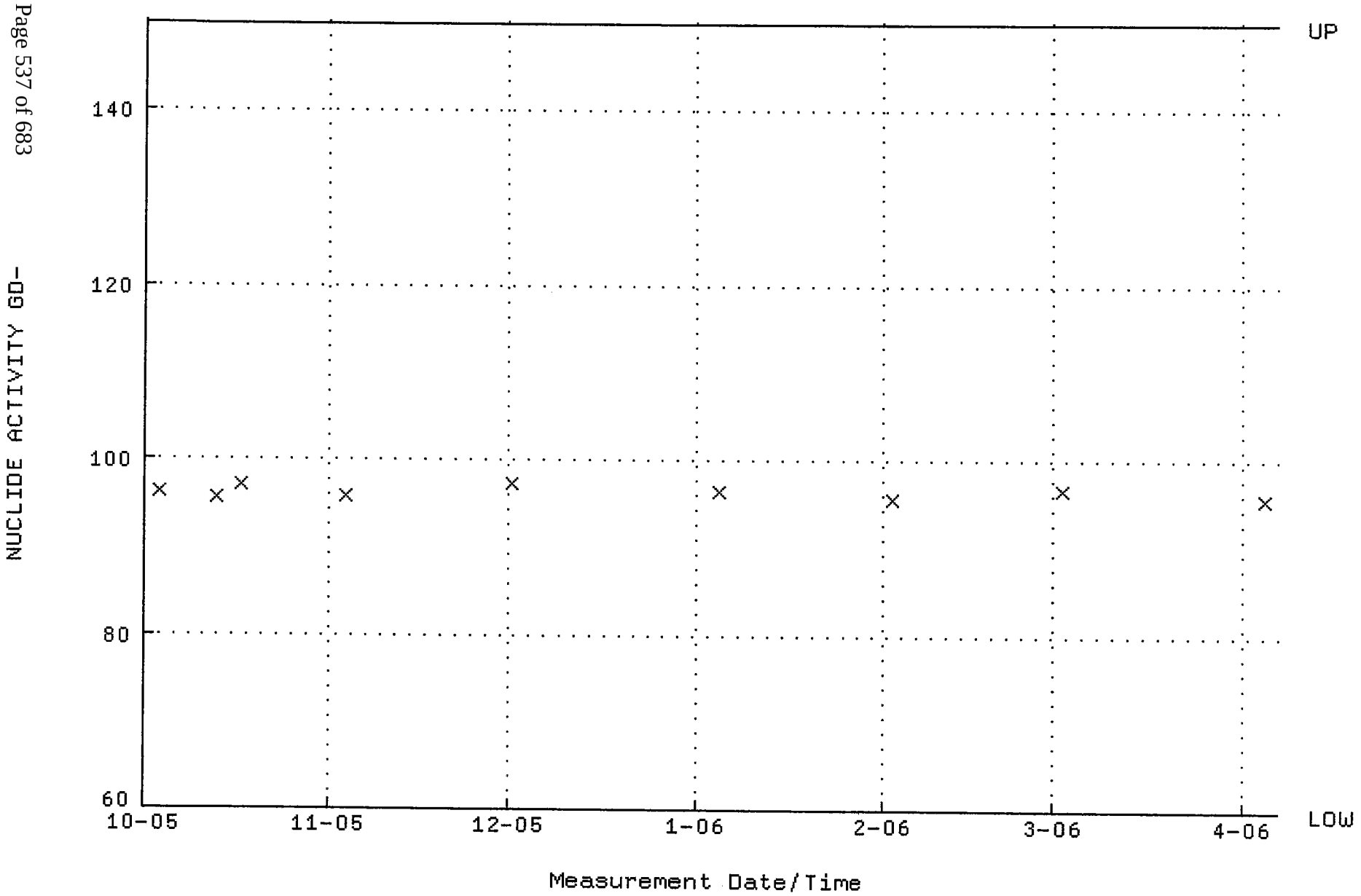
QA filename : DKA100:[ENV_ALPHA.QA.B]B032.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:42 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



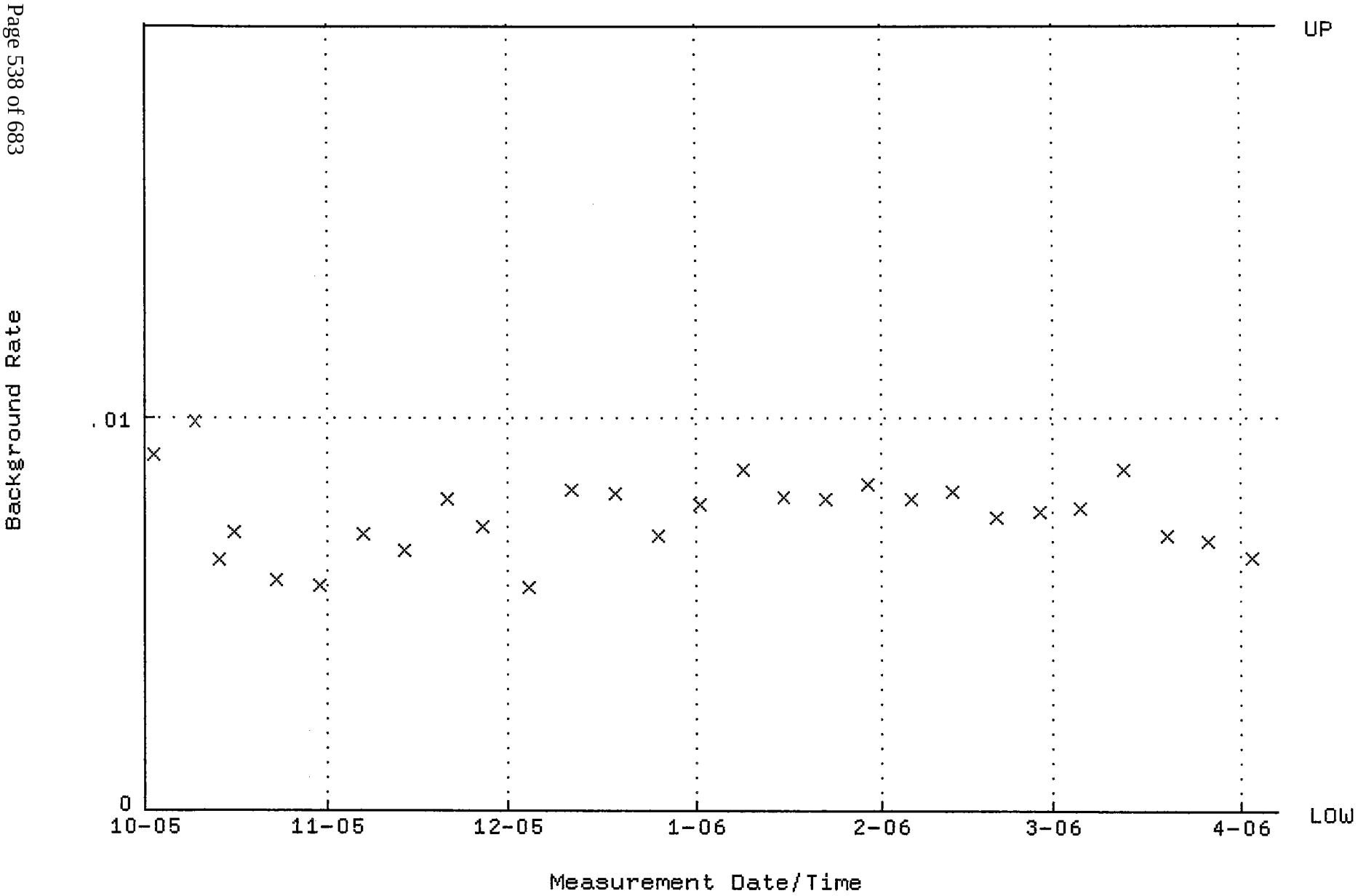
QA filename : DKA100:[ENV_ALPHA.QA.W]W034.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 12:02:09 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



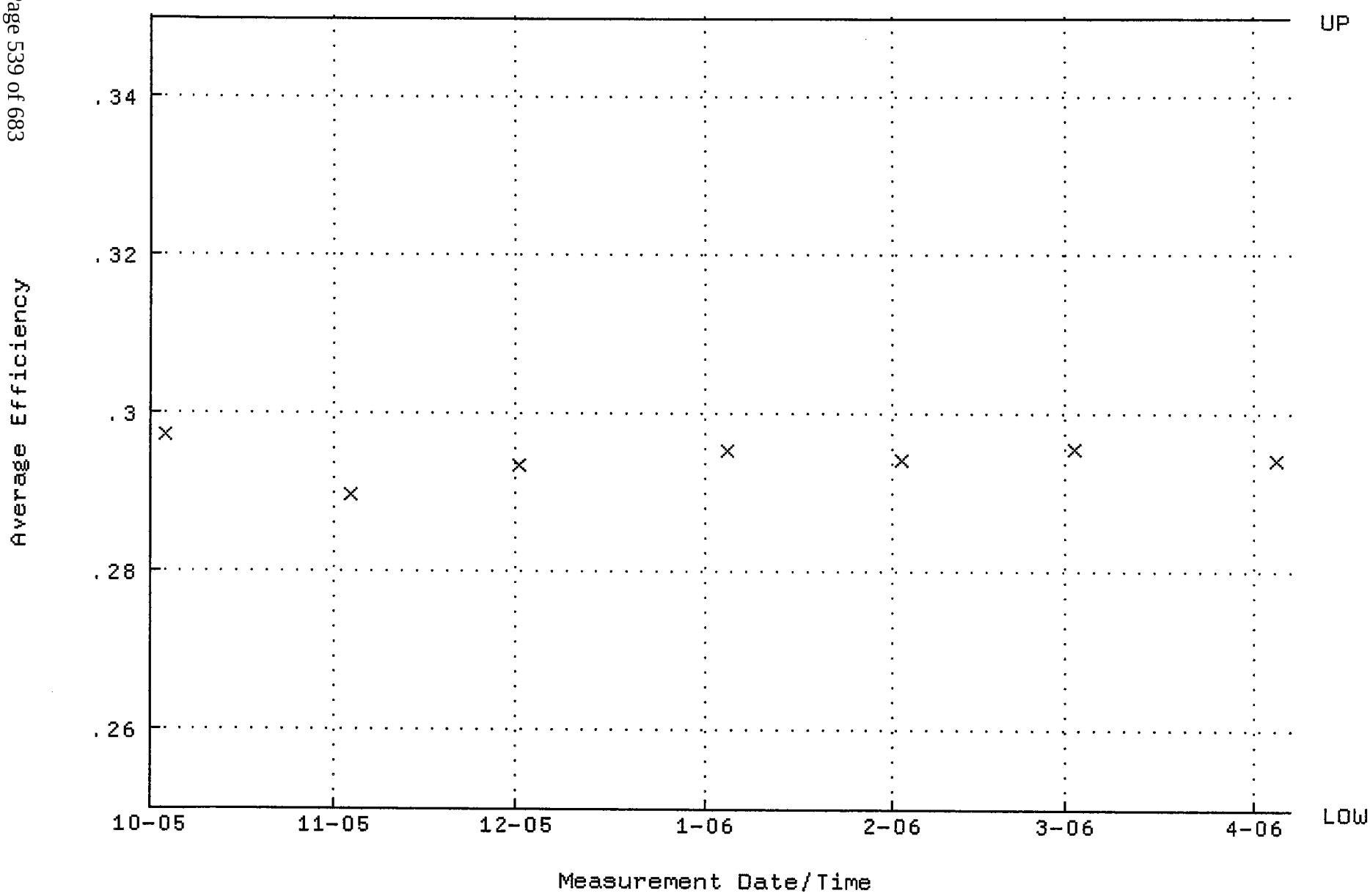
QA filename : DKA100:[ENV_ALPHA.QA.W]W034.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 12:02:09 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



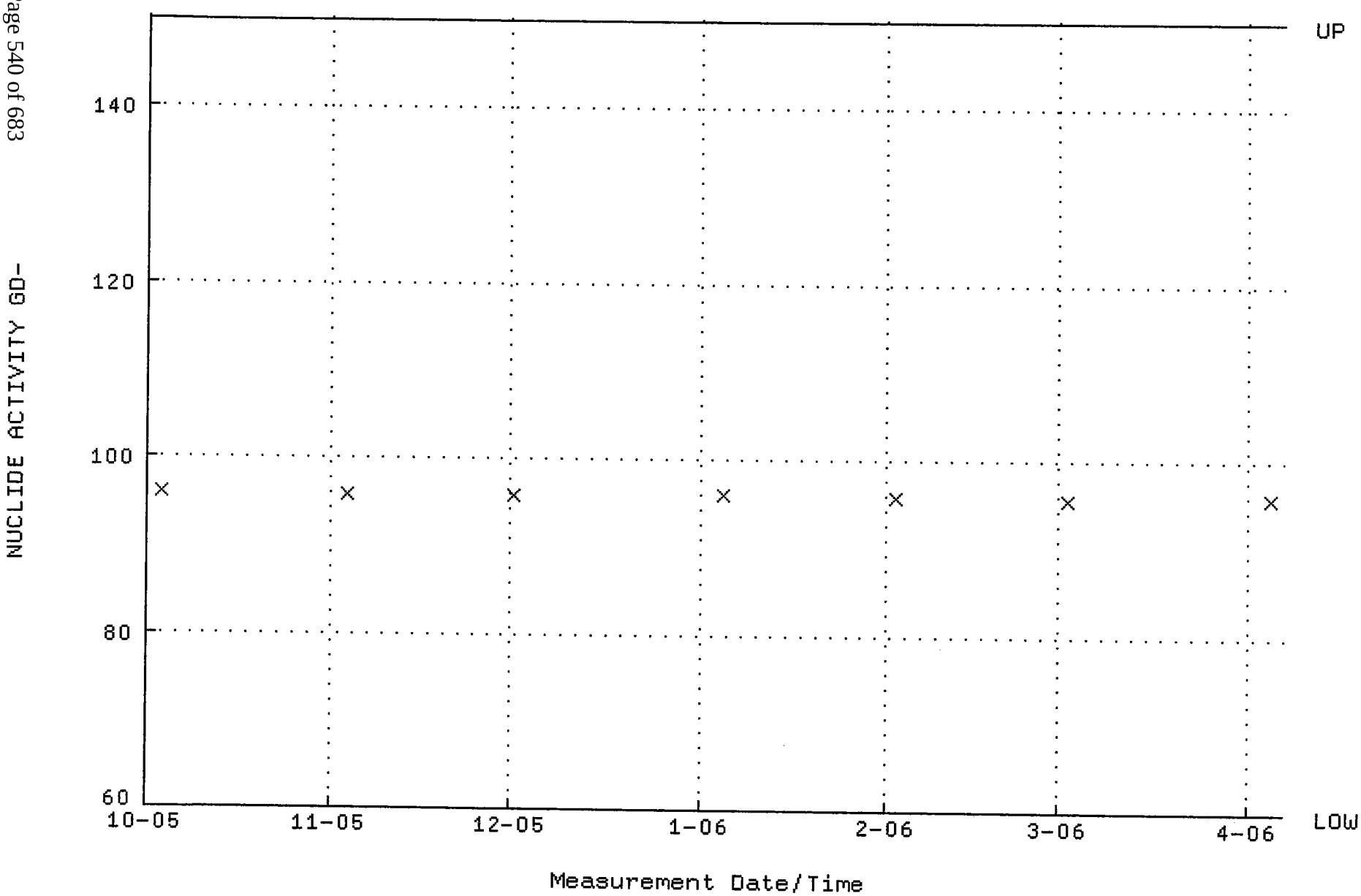
QA filename : DKA100:[ENV_ALPHA.QA.B]B034.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:42 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



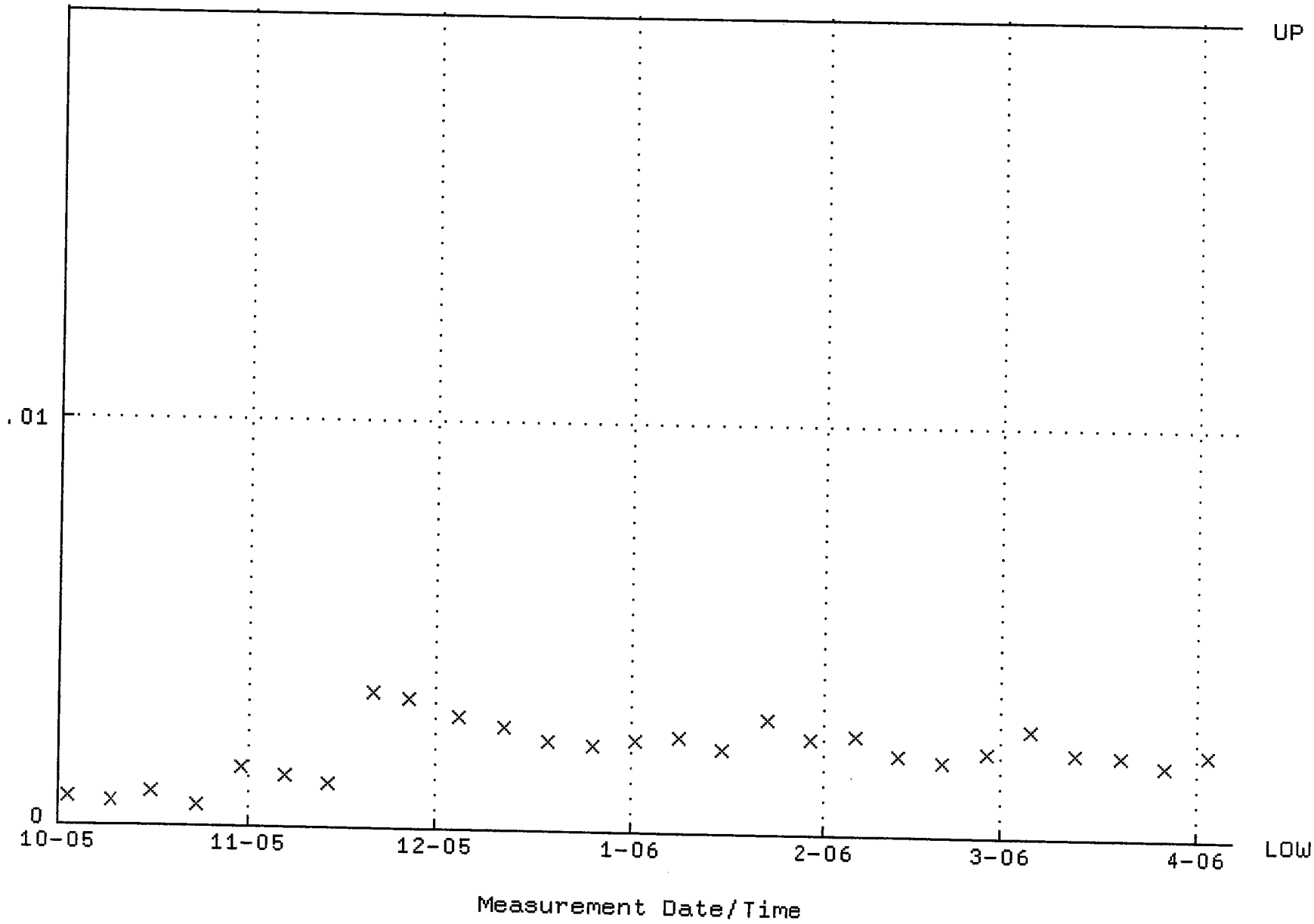
QA filename : DKA100:[ENV_ALPHA.QA.W]W045.QAF;5
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 12:04:17 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.250000 through 0.350000



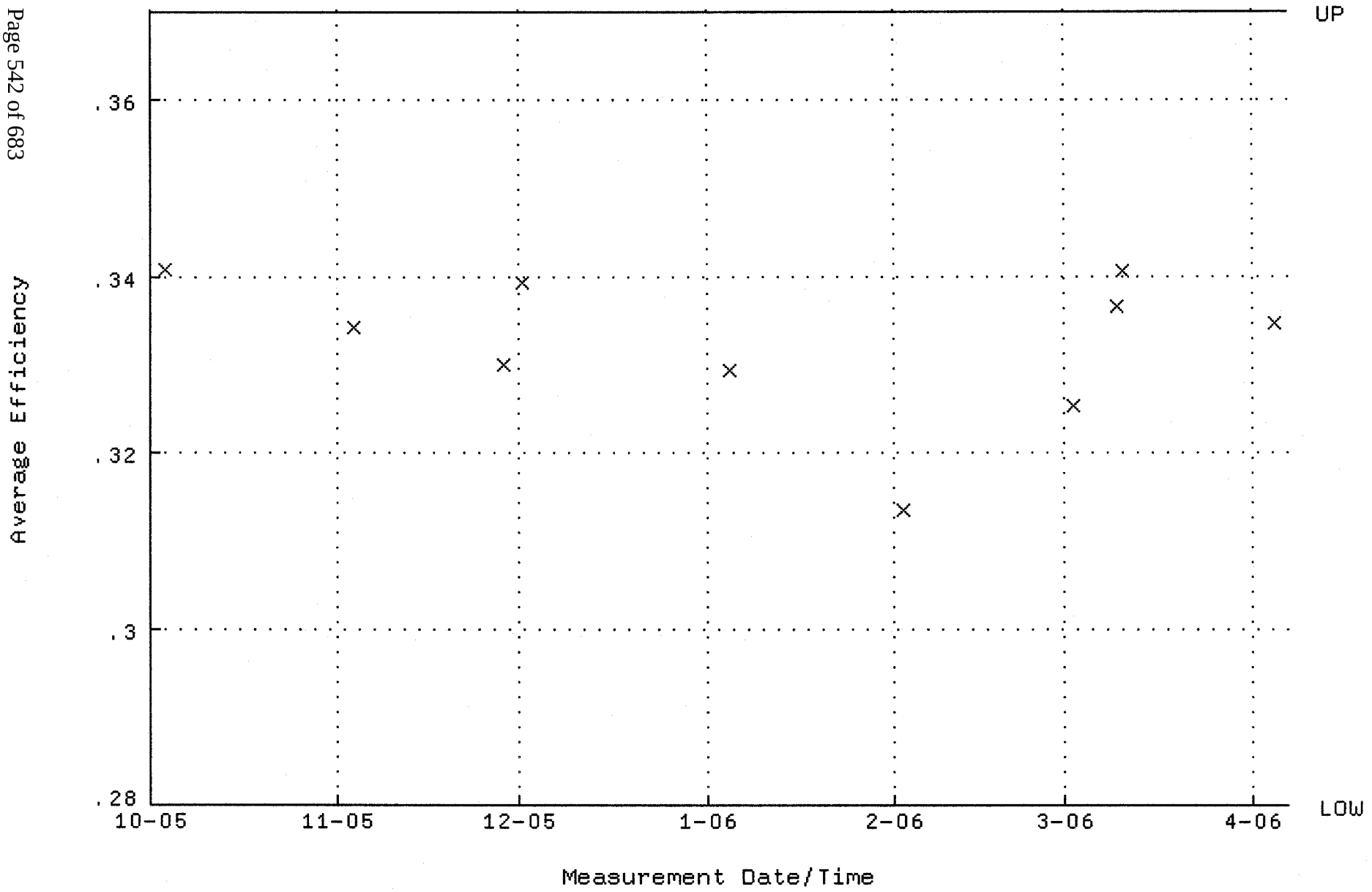
QA filename : DKA100:[ENV_ALPHA.QA.W]W045.QAF;5
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 12:04:17 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



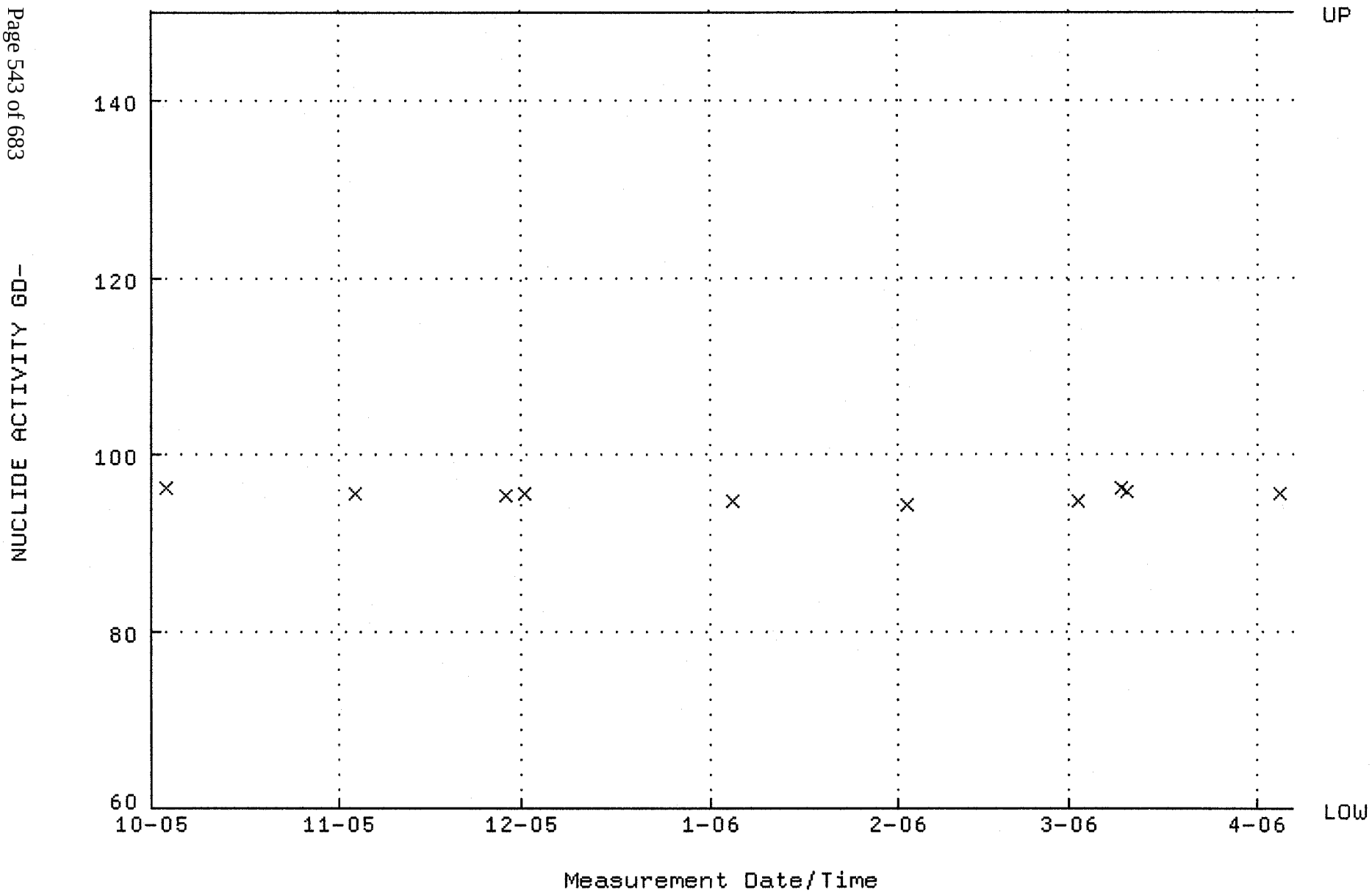
QA filename : DKA100:[ENV_ALPHA.QA.B]B045.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:44 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



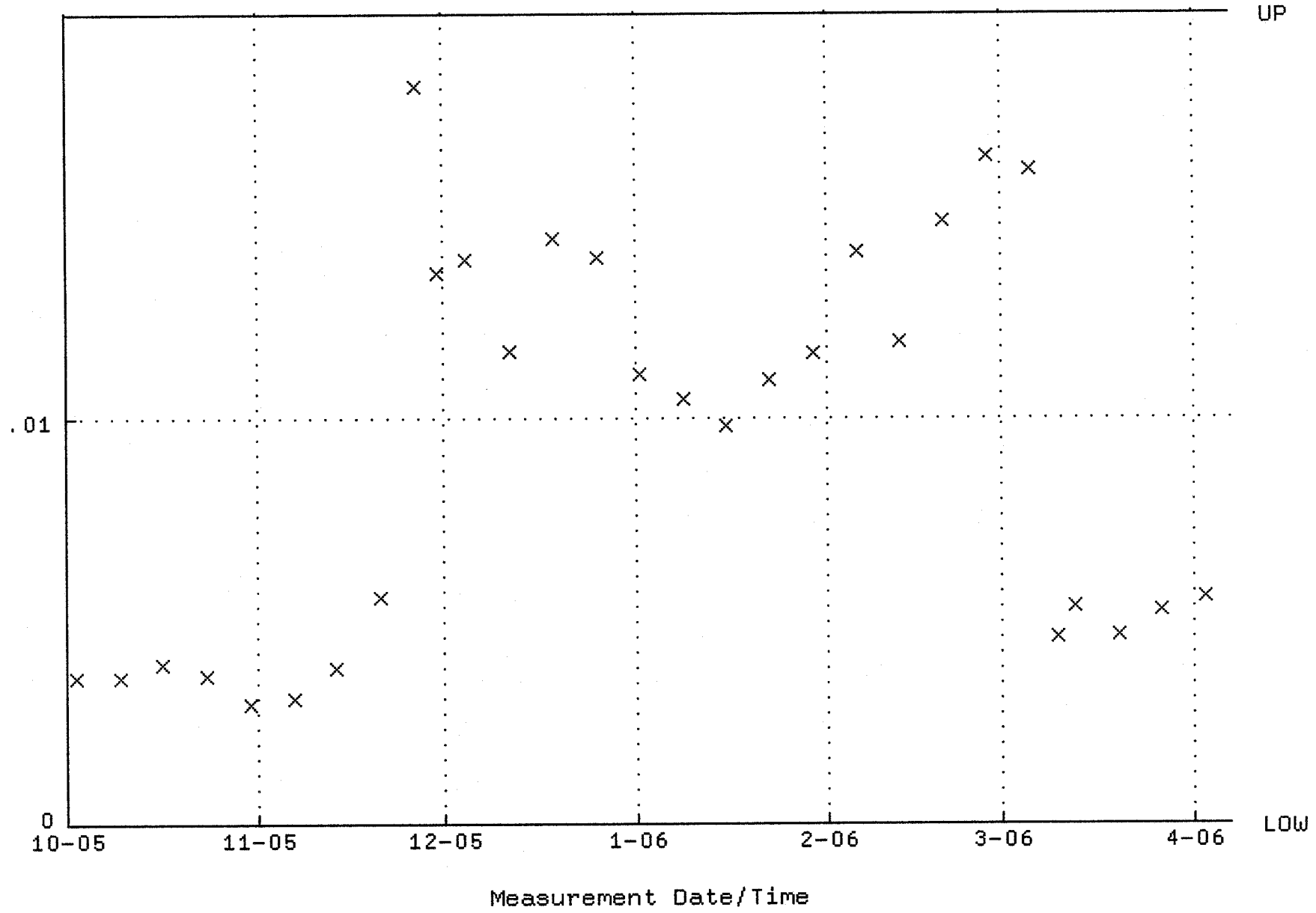
QA filename : DKA100:[ENV_ALPHA.QA.W]W046.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 12:04:17 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



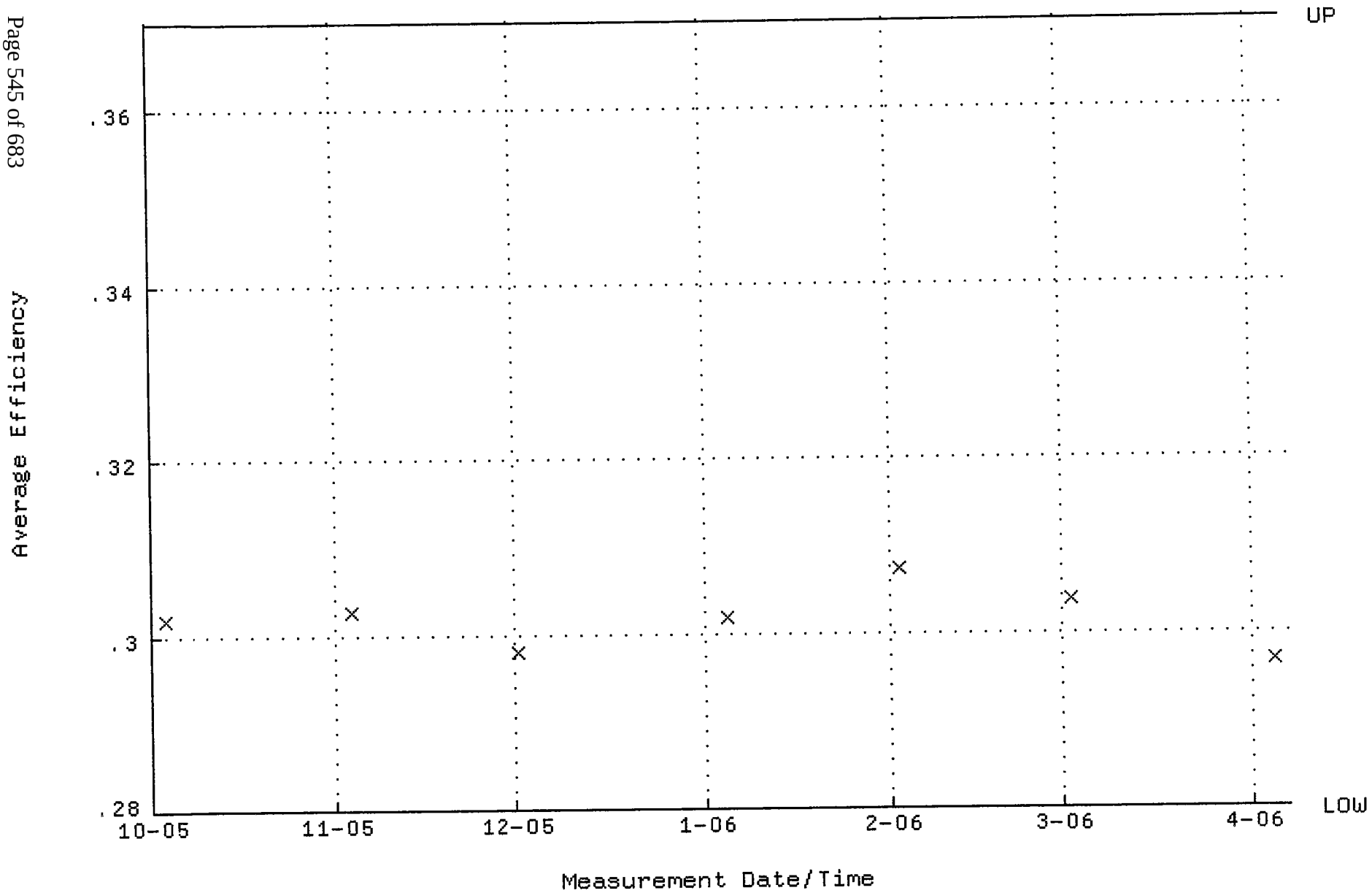
QA filename : DKA100:[ENV_ALPHA.QA.W]W046.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 12:04:17 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



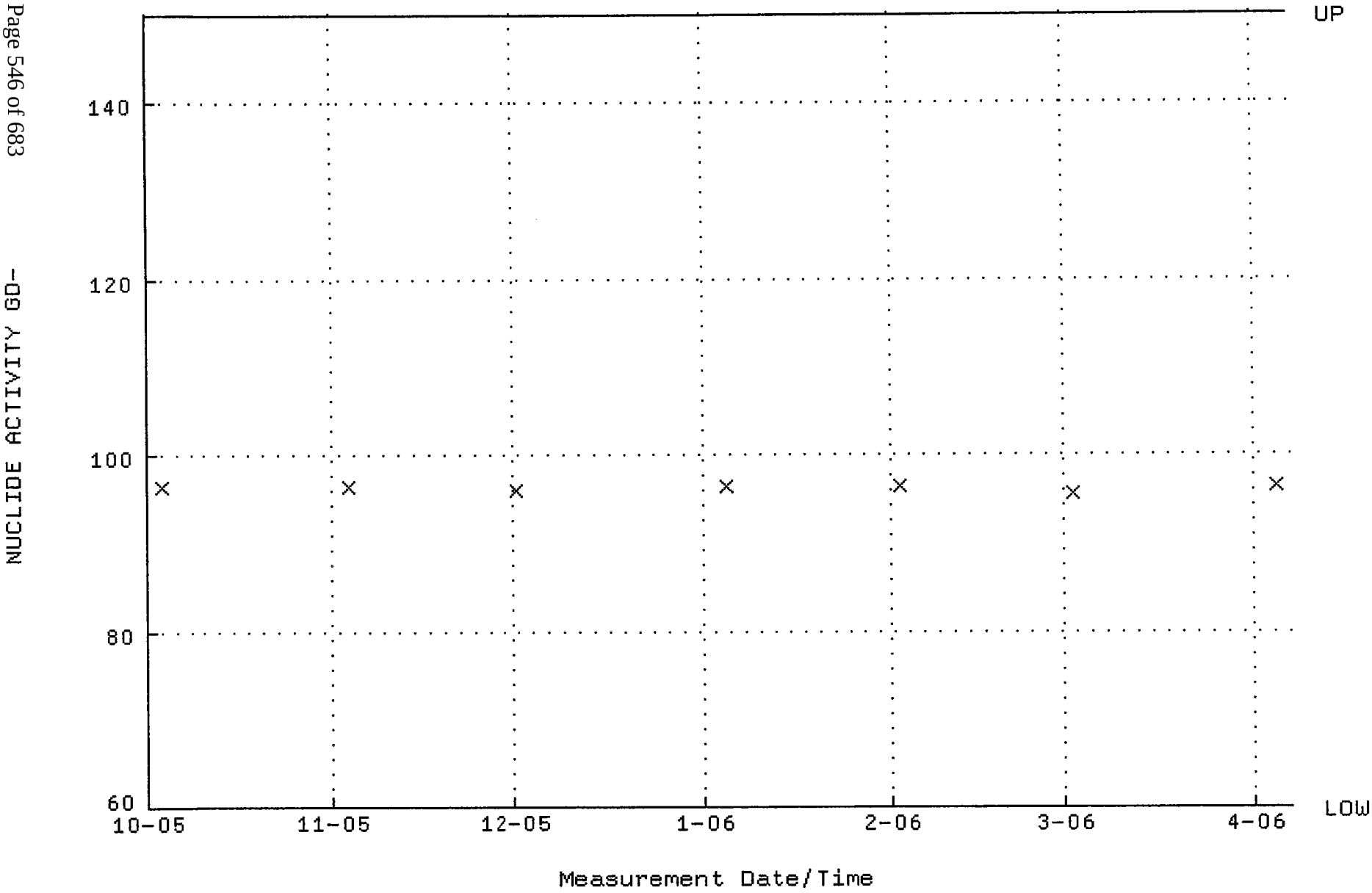
QA filename : DKA100:[ENV_ALPHA.QA.B]B046.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:44 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



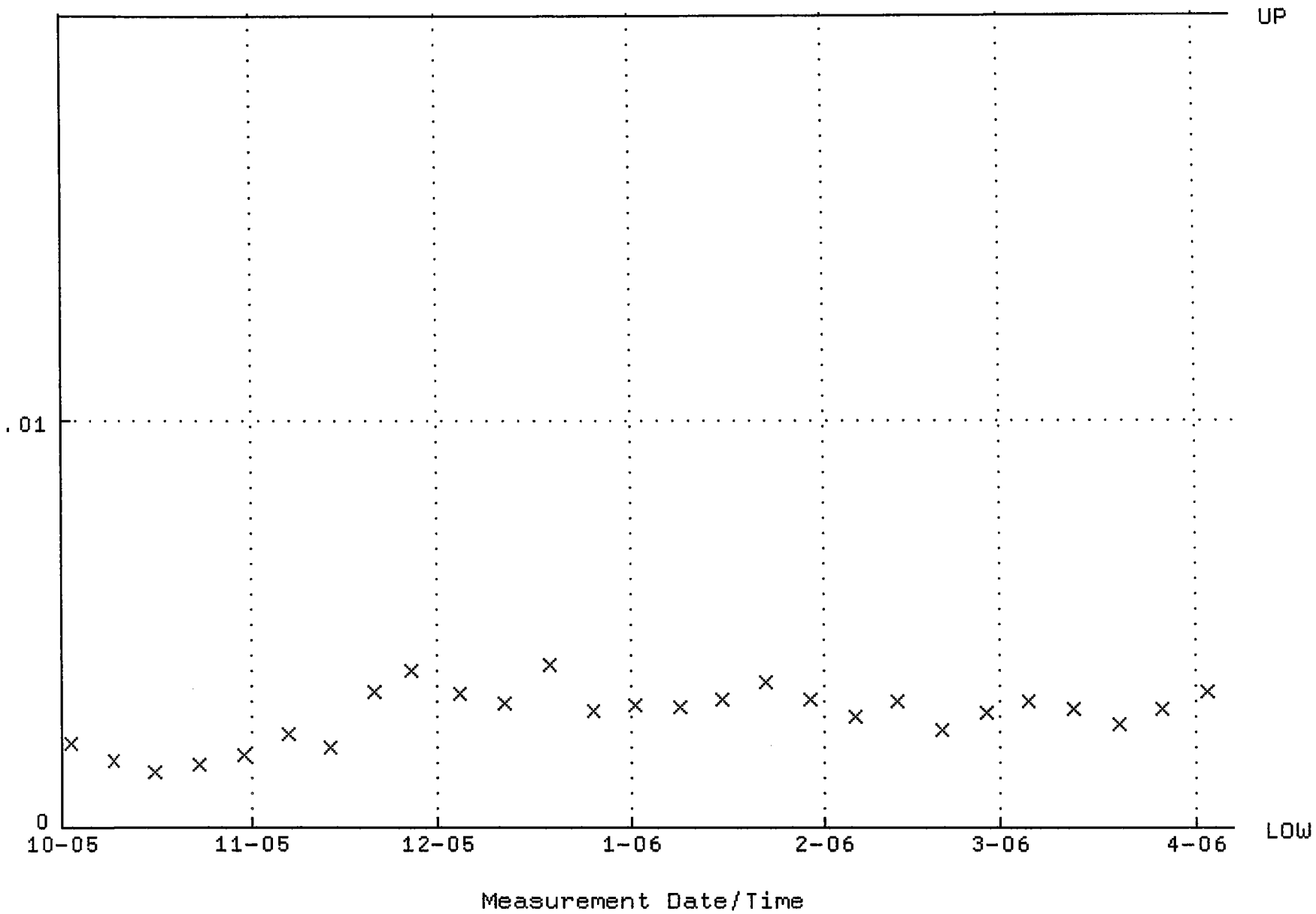
QA filename : DKA100:[ENV_ALPHA.QA.W]W047.QAF;5
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 12:04:17 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



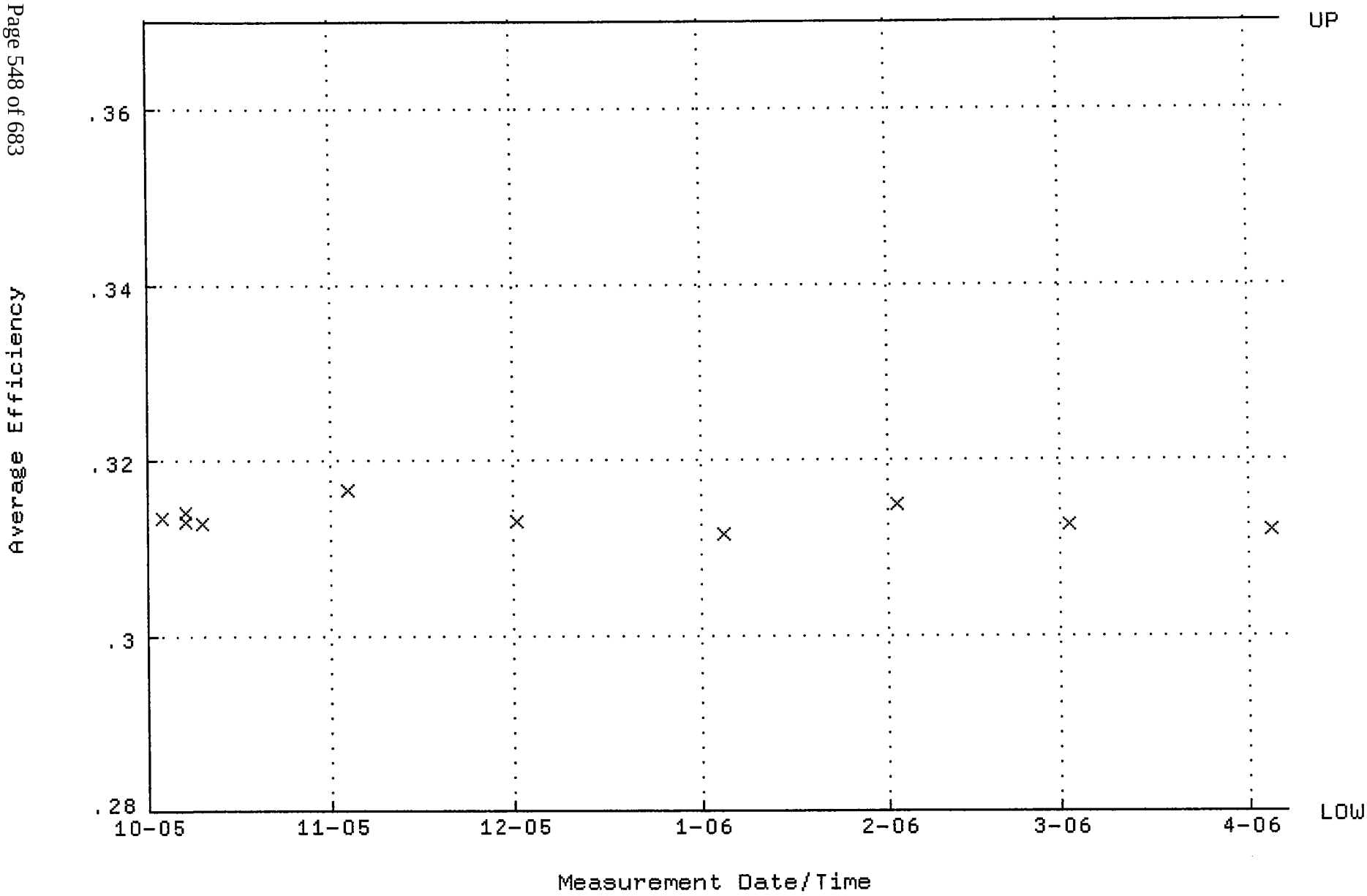
QA filename : DKA100:[ENV_ALPHA.QA.W]W047.QAF;5
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 12:04:17 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



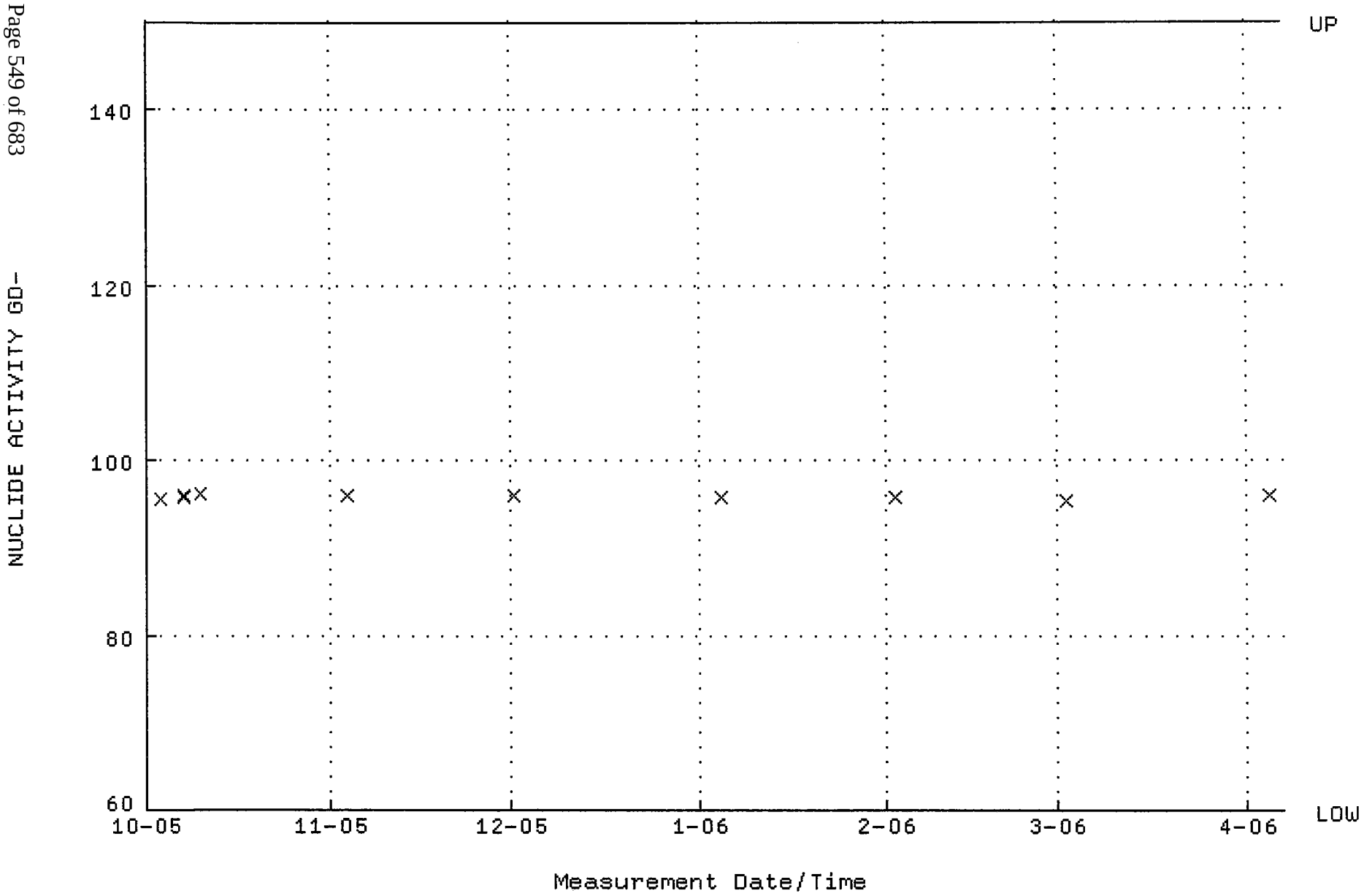
QA filename : DKA100:[ENV_ALPHA.QA.B]B047.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:44 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



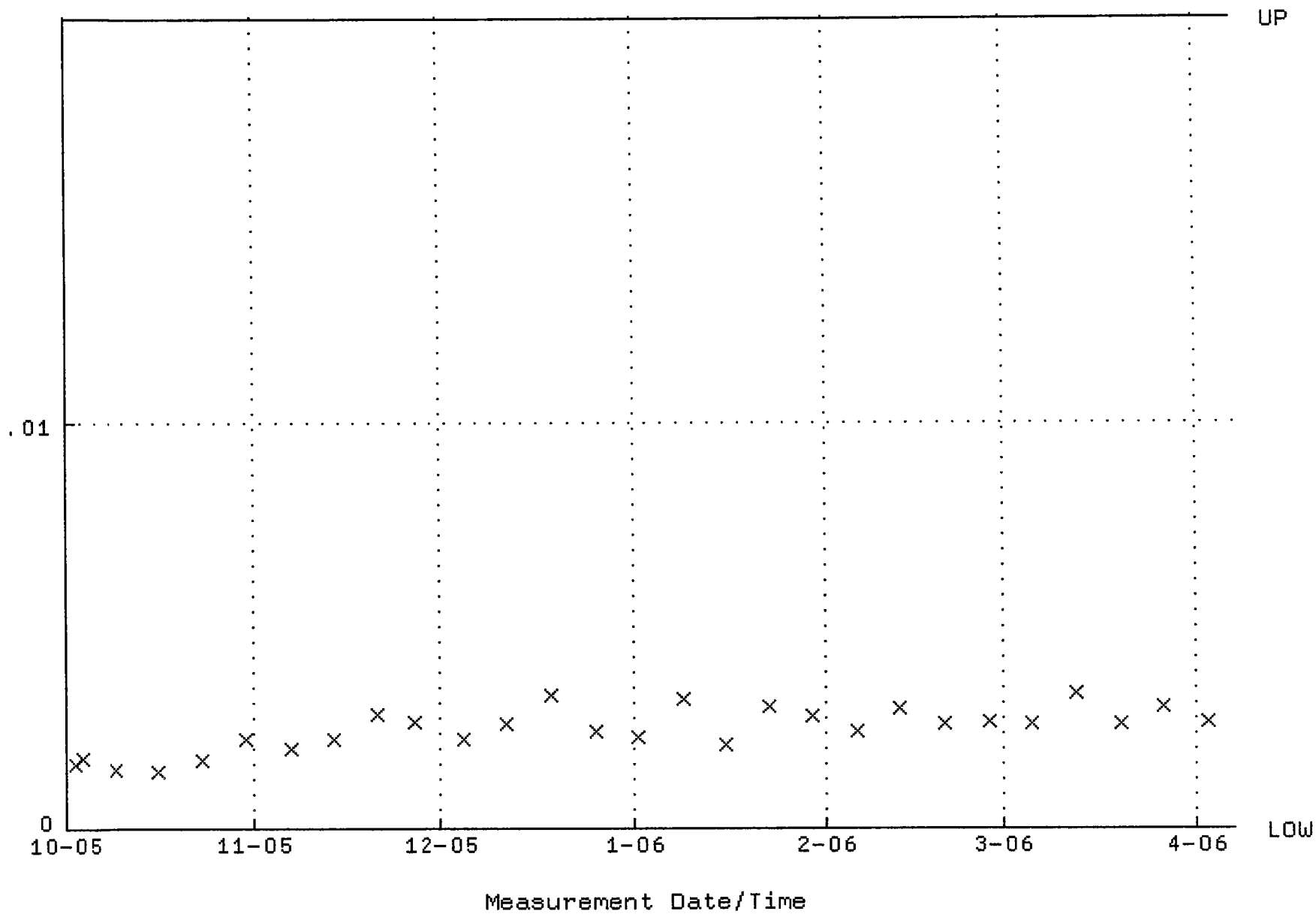
QA filename : DKA100:[ENV_ALPHA.QA.W]W048.QAF;6
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 12:04:17 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



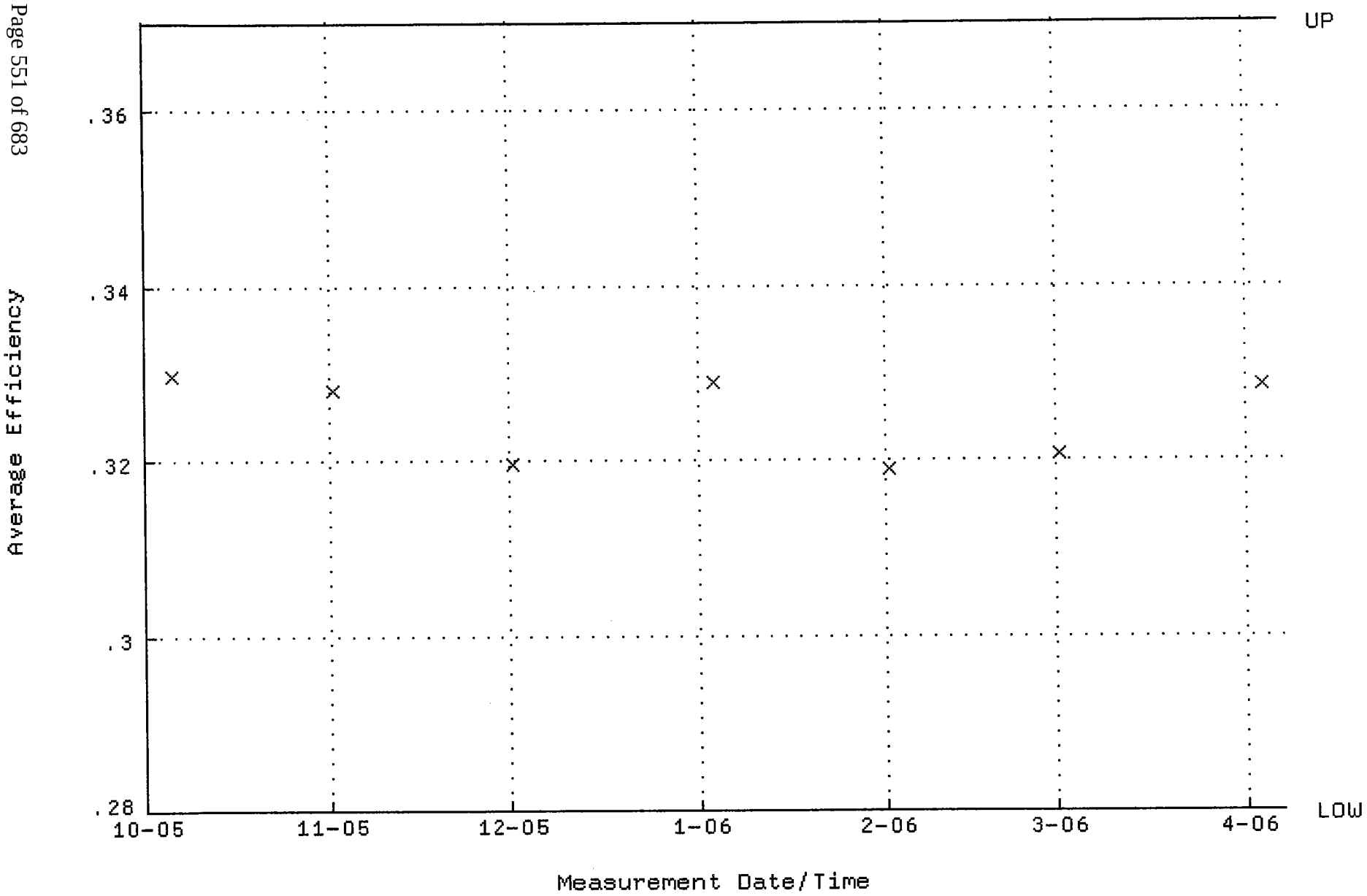
QA filename : DKA100:[ENV_ALPHA.QA.W]W048.QAF;6
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 12:04:17 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



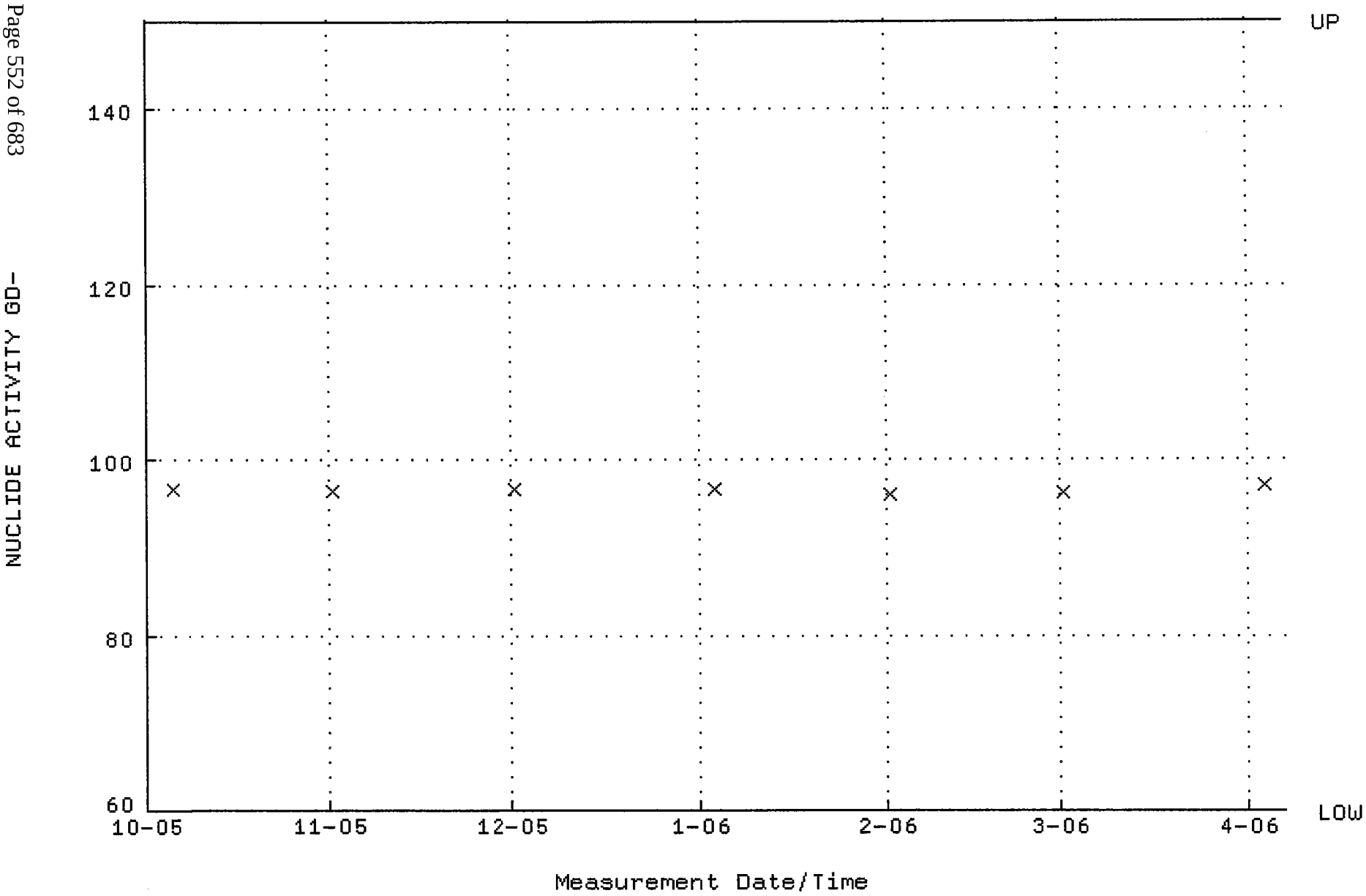
QA filename : DKA100:[ENV_ALPHA.QA.B]B048.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:44 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



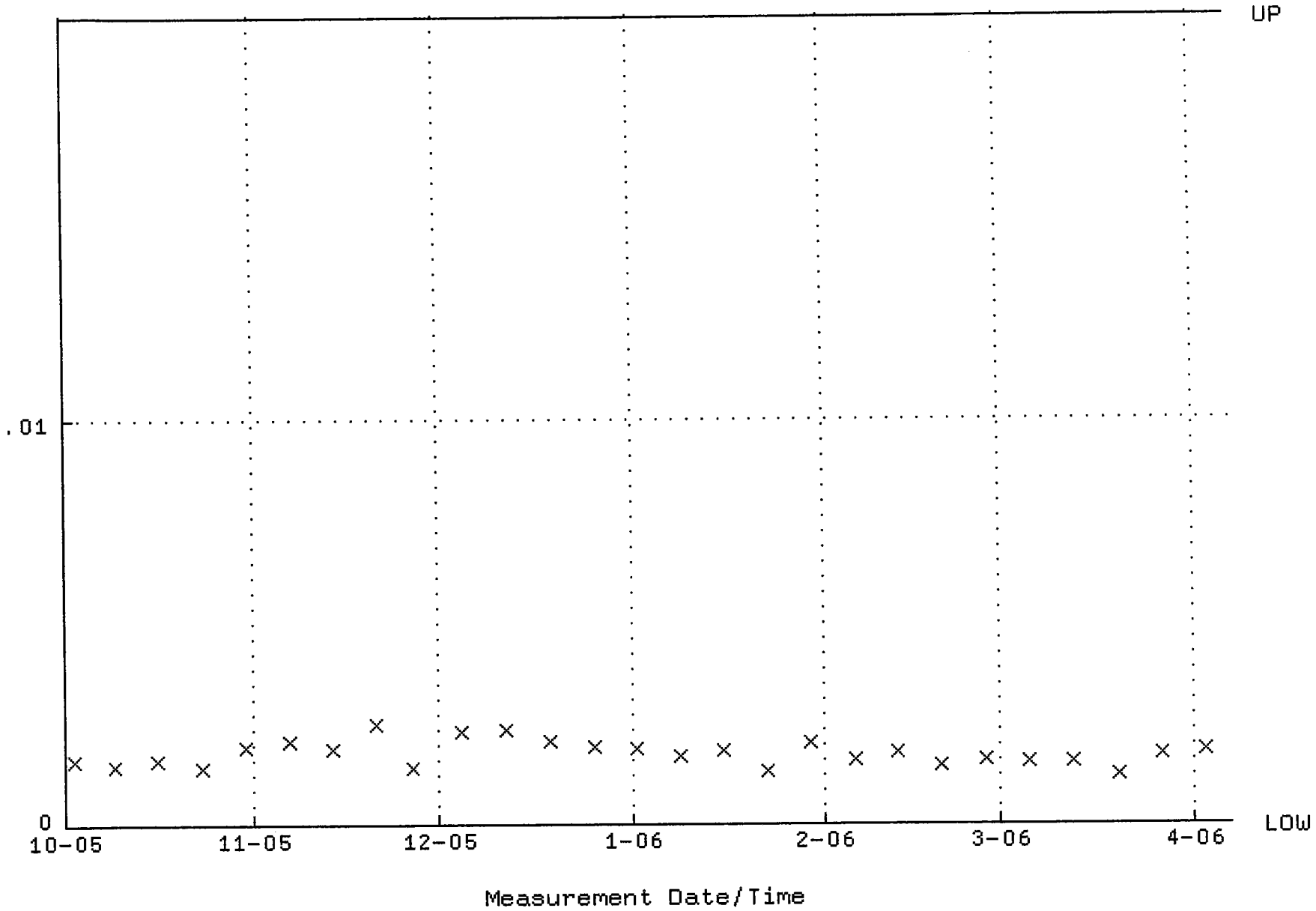
QA filename : DKA100:[ENV_ALPHA.QA.W]W077.QAF;5
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



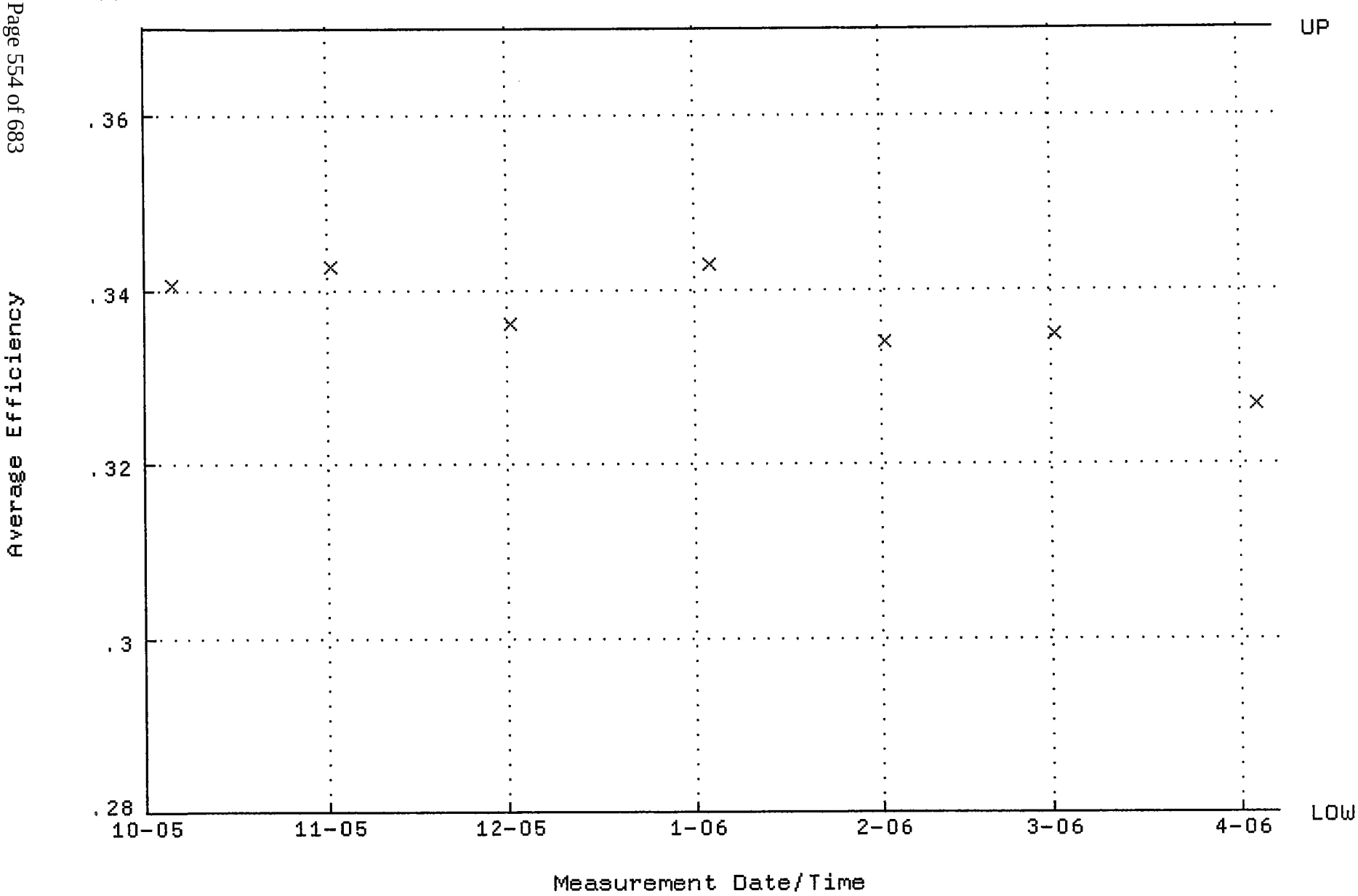
QA filename : DKA100:[ENV_ALPHA.QA.W]W077.QAF;5
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



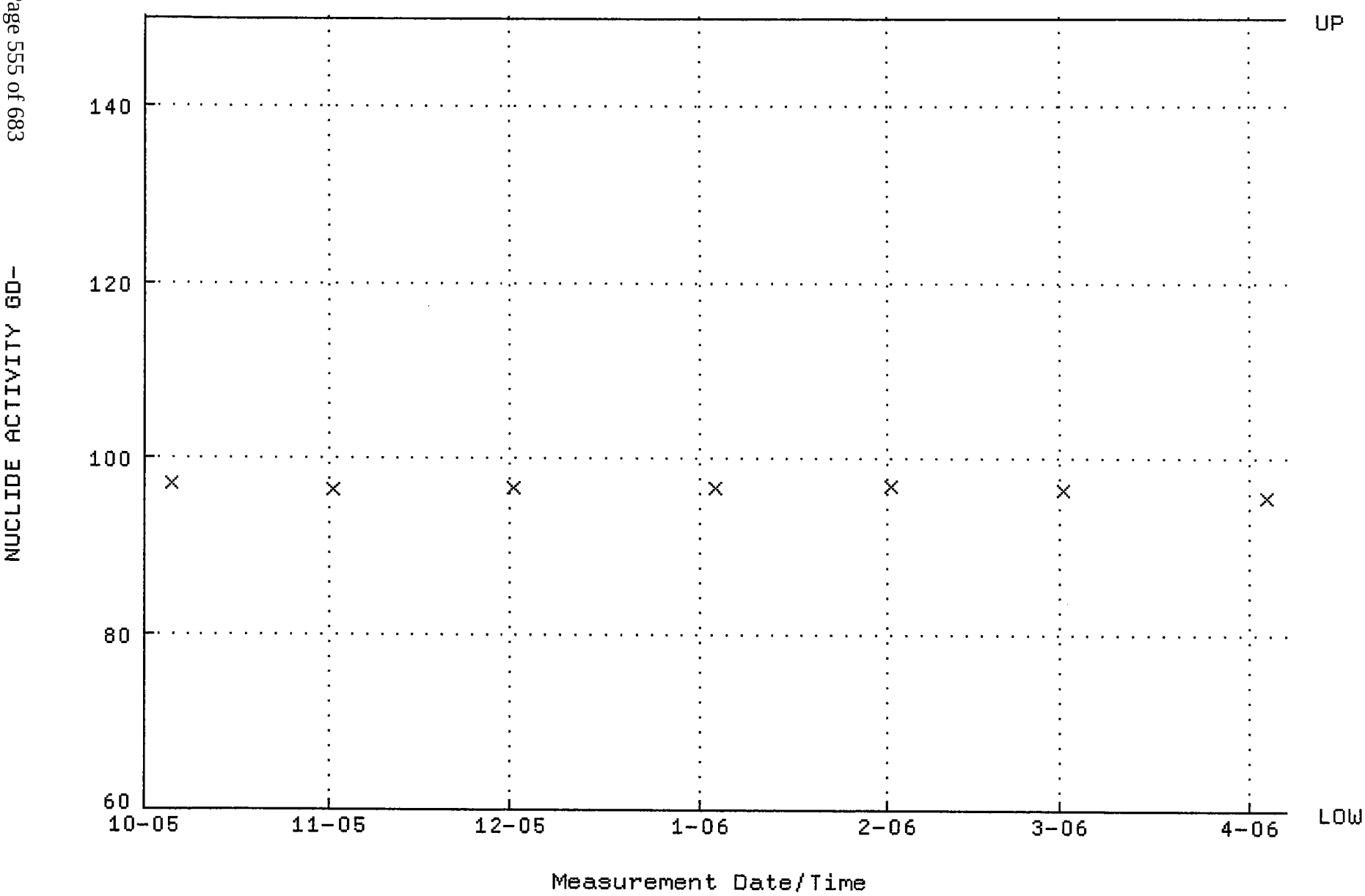
QA filename : DKA100:[ENV_ALPHA.QA.B]B077.QAF;3
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:57:18 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



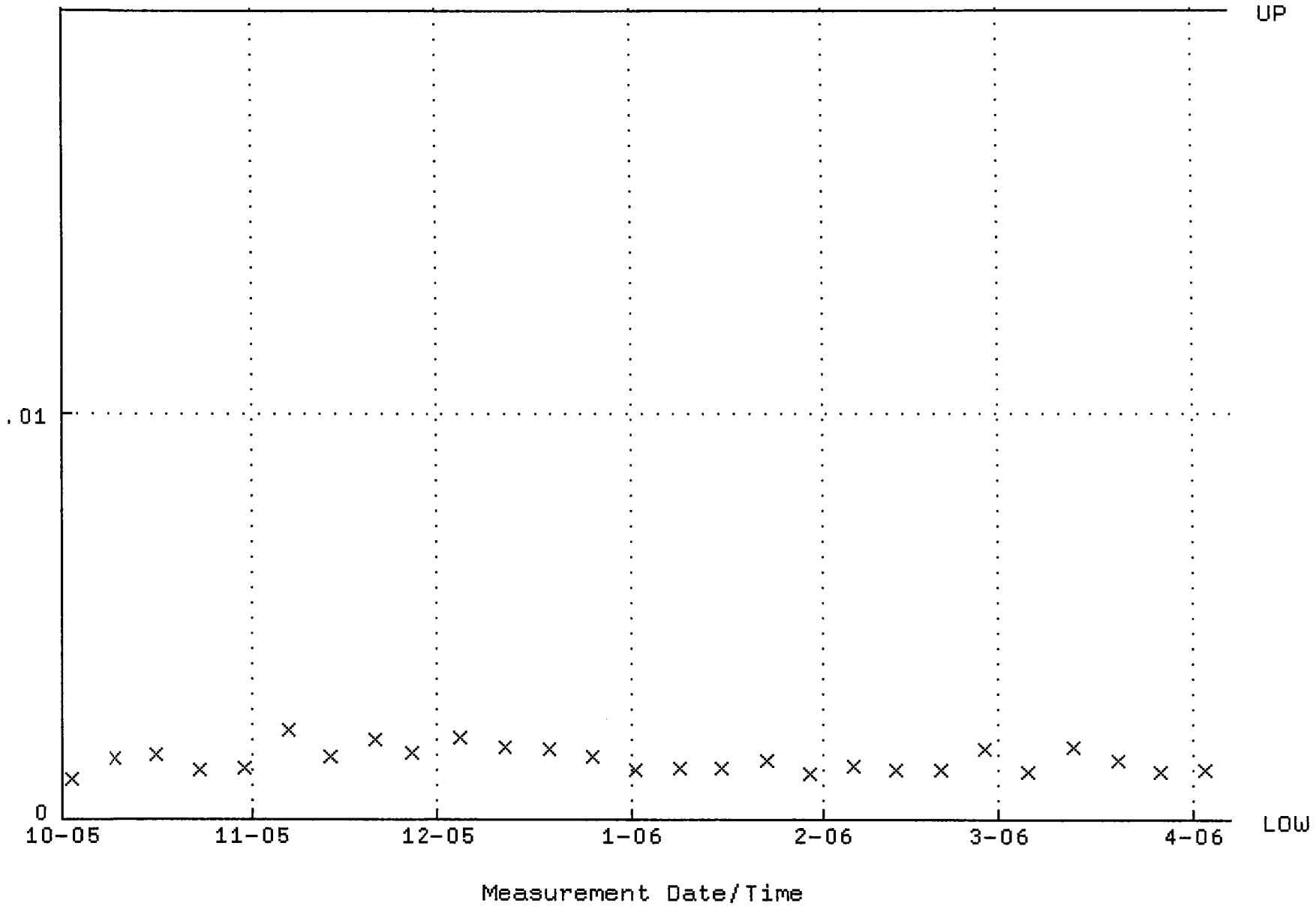
QA filename : DKA100:[ENV_ALPHA.QA.W]W078.QAF;6
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



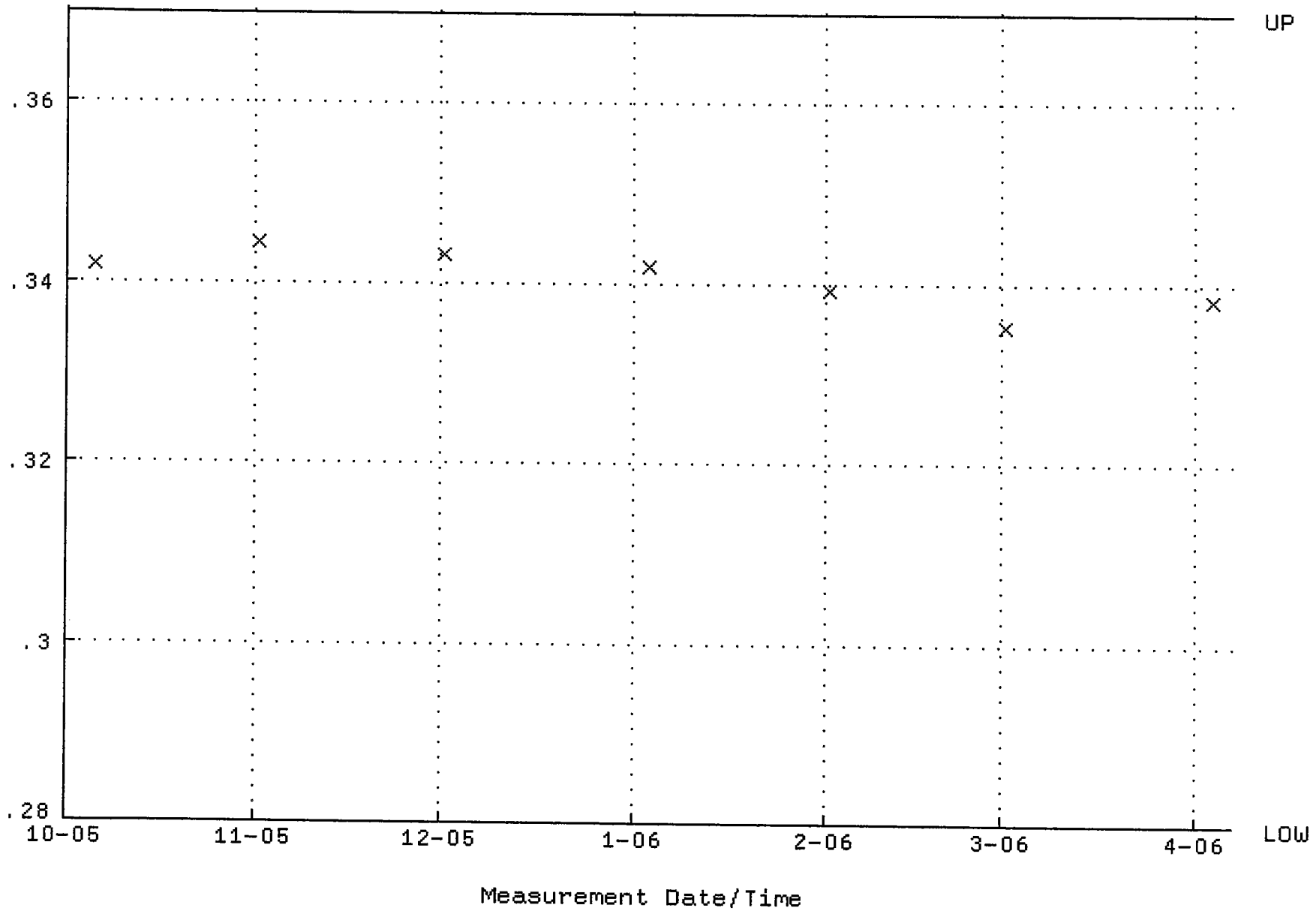
QA filename : DKA100:[ENV_ALPHA.QA.W]W078.QAF;6
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



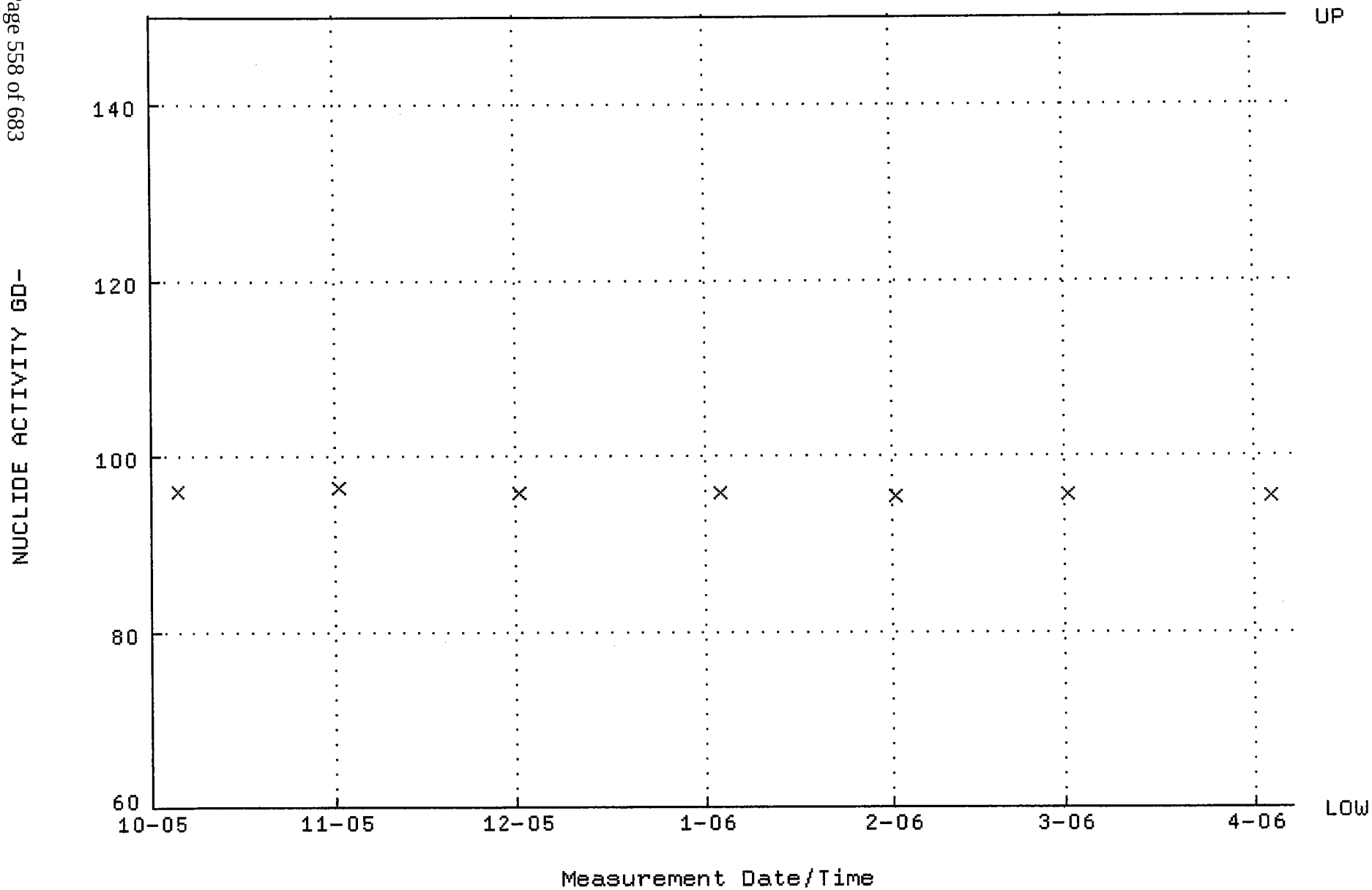
QA filename : DKA100:[ENV_ALPHA.QA.B]B078.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:57:18 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



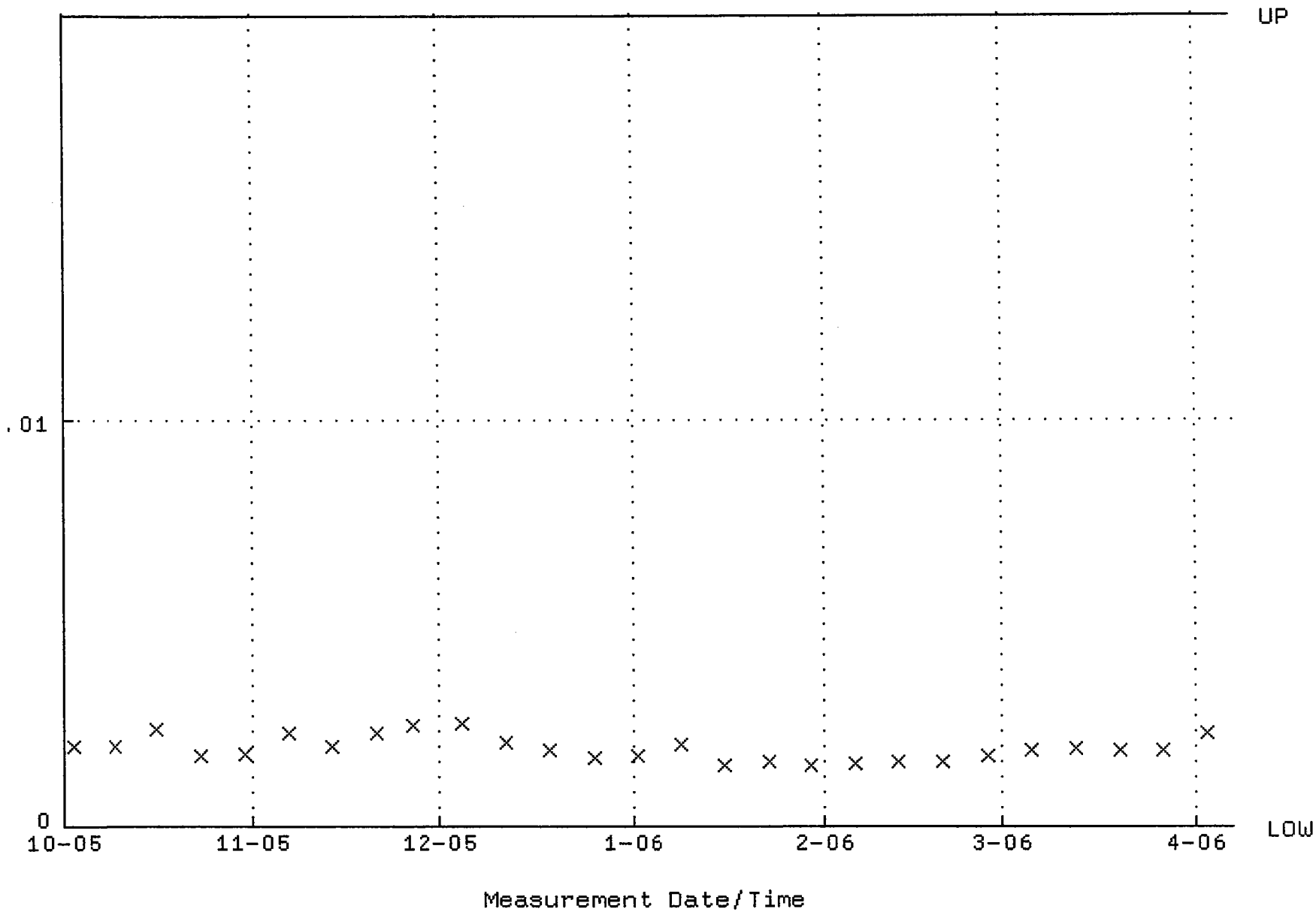
QA filename : DKA100:[ENV_ALPHA.QA.W]W079.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



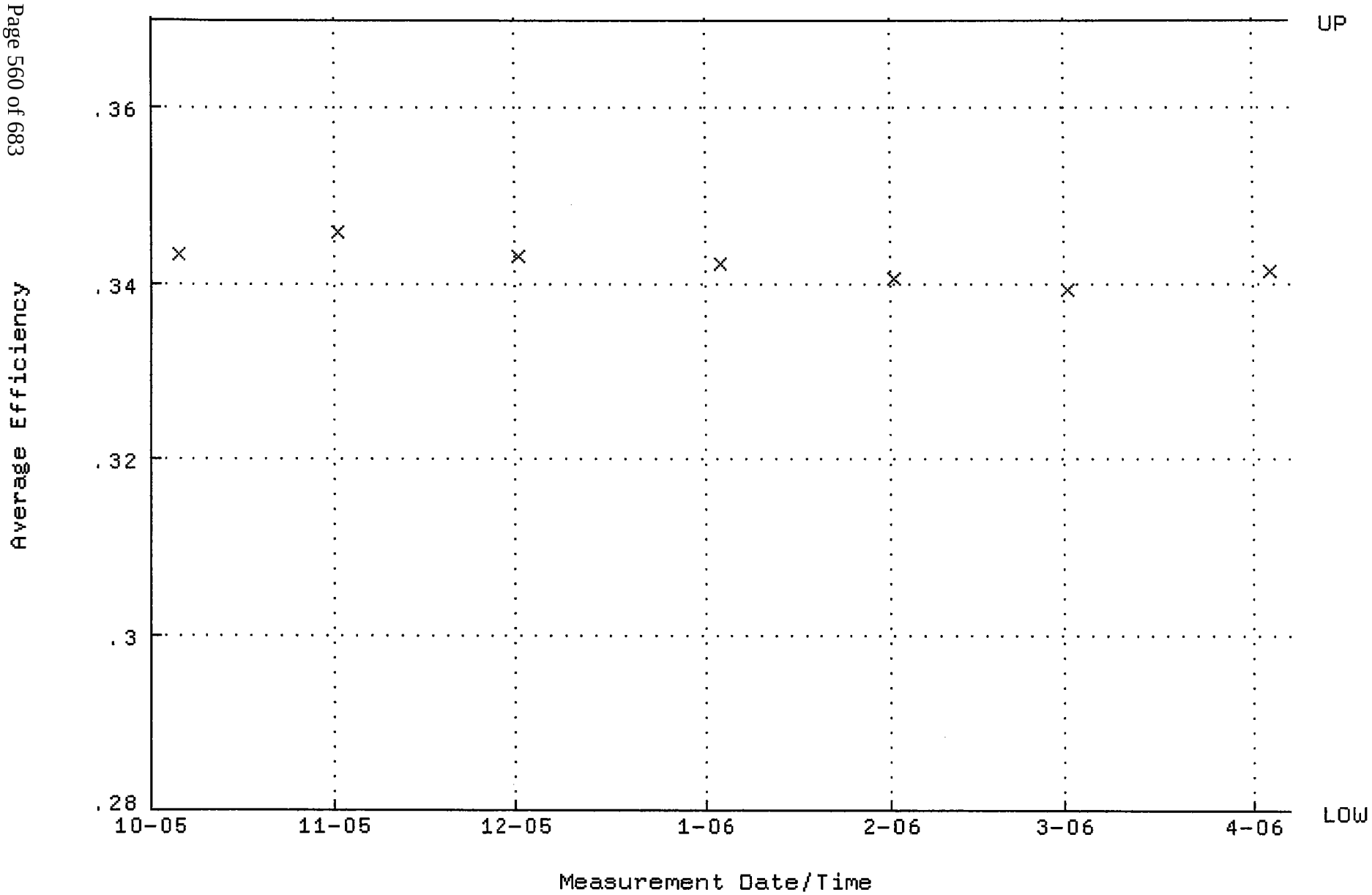
QA filename : DKA100:[ENV_ALPHA.QA.W]W079.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



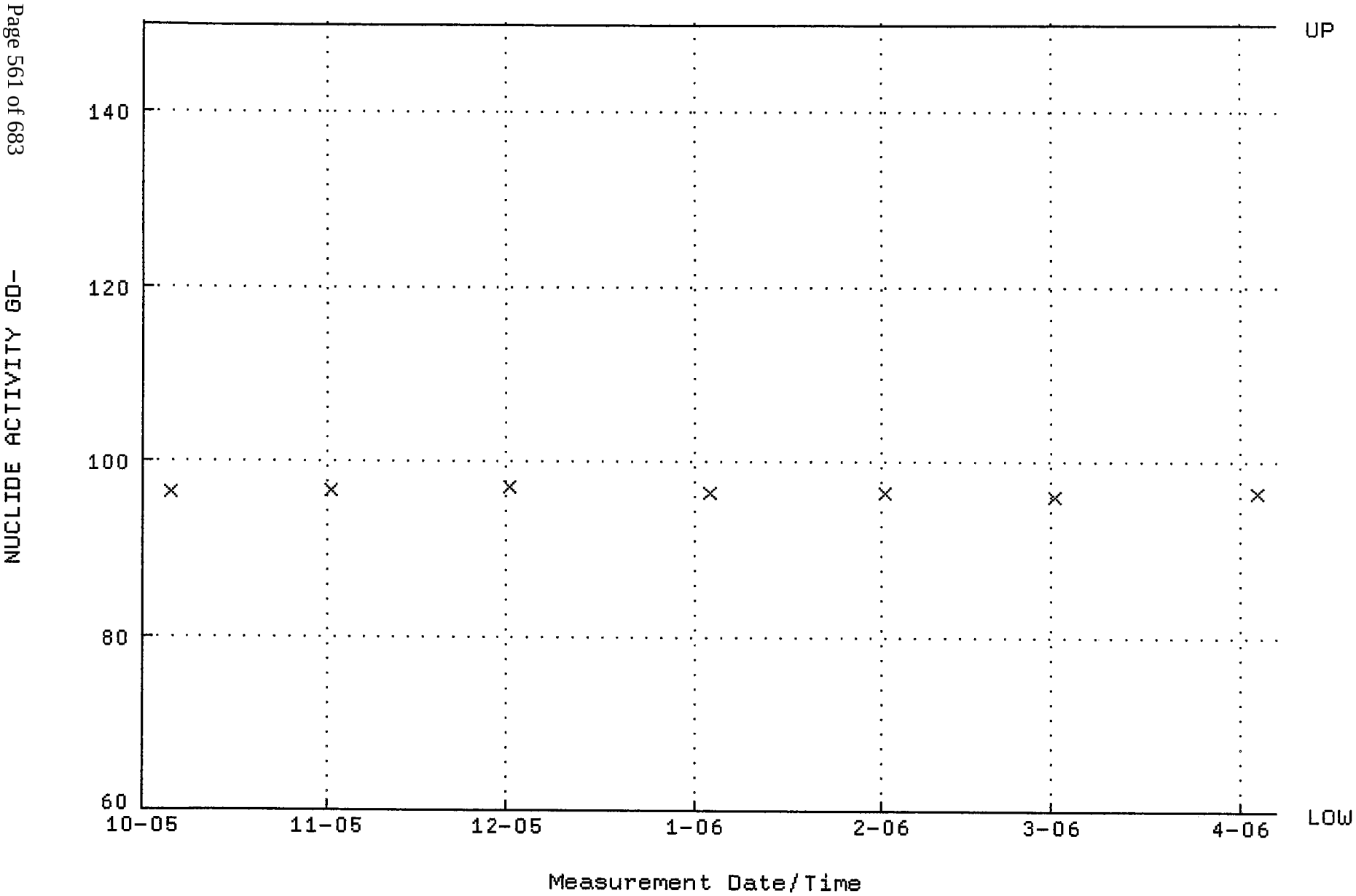
QA filename : DKA100:[ENV_ALPHA.QA.B]B079.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:57:18 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



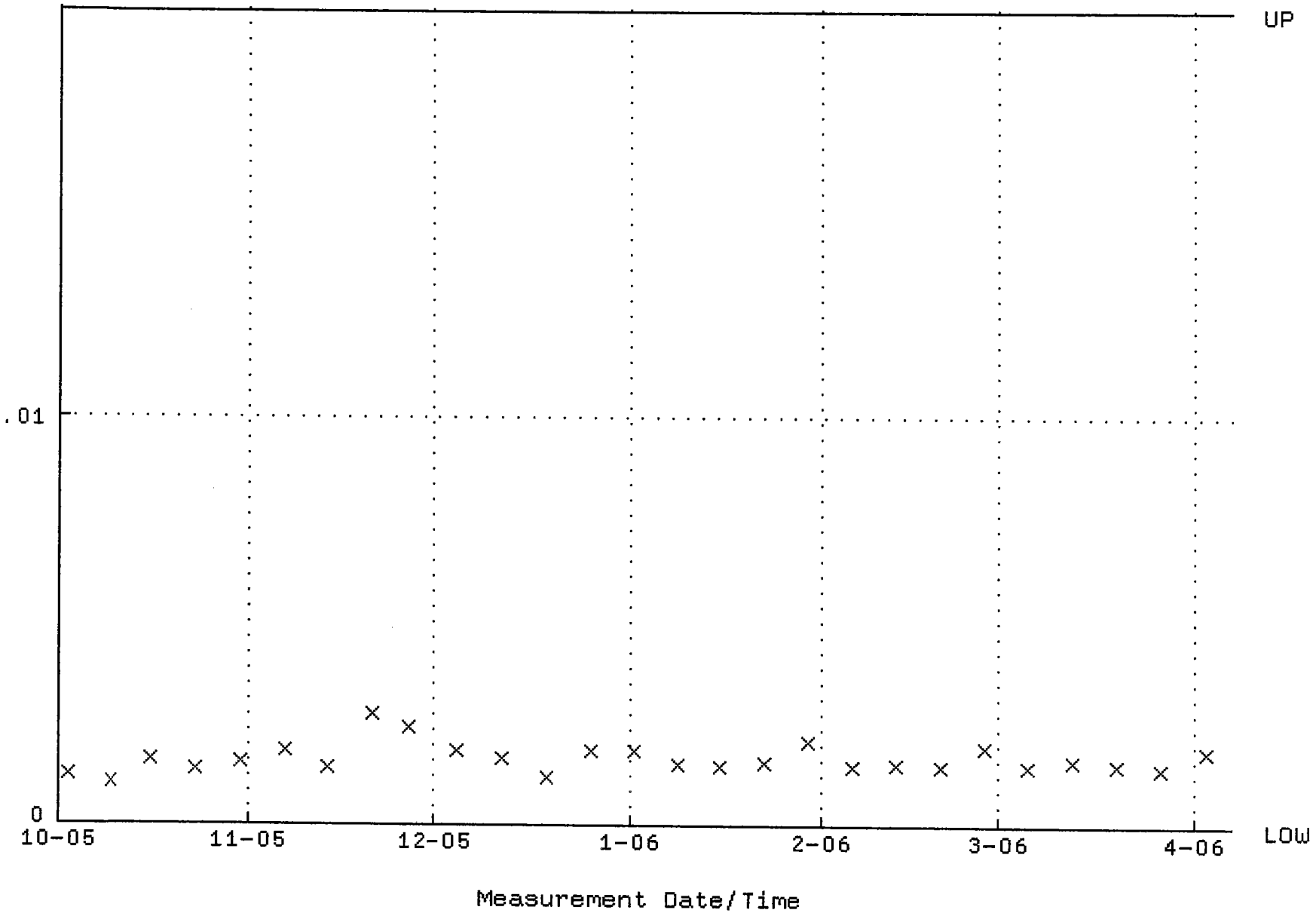
QA filename : DKA100:[ENV_ALPHA.QA.W]W080.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



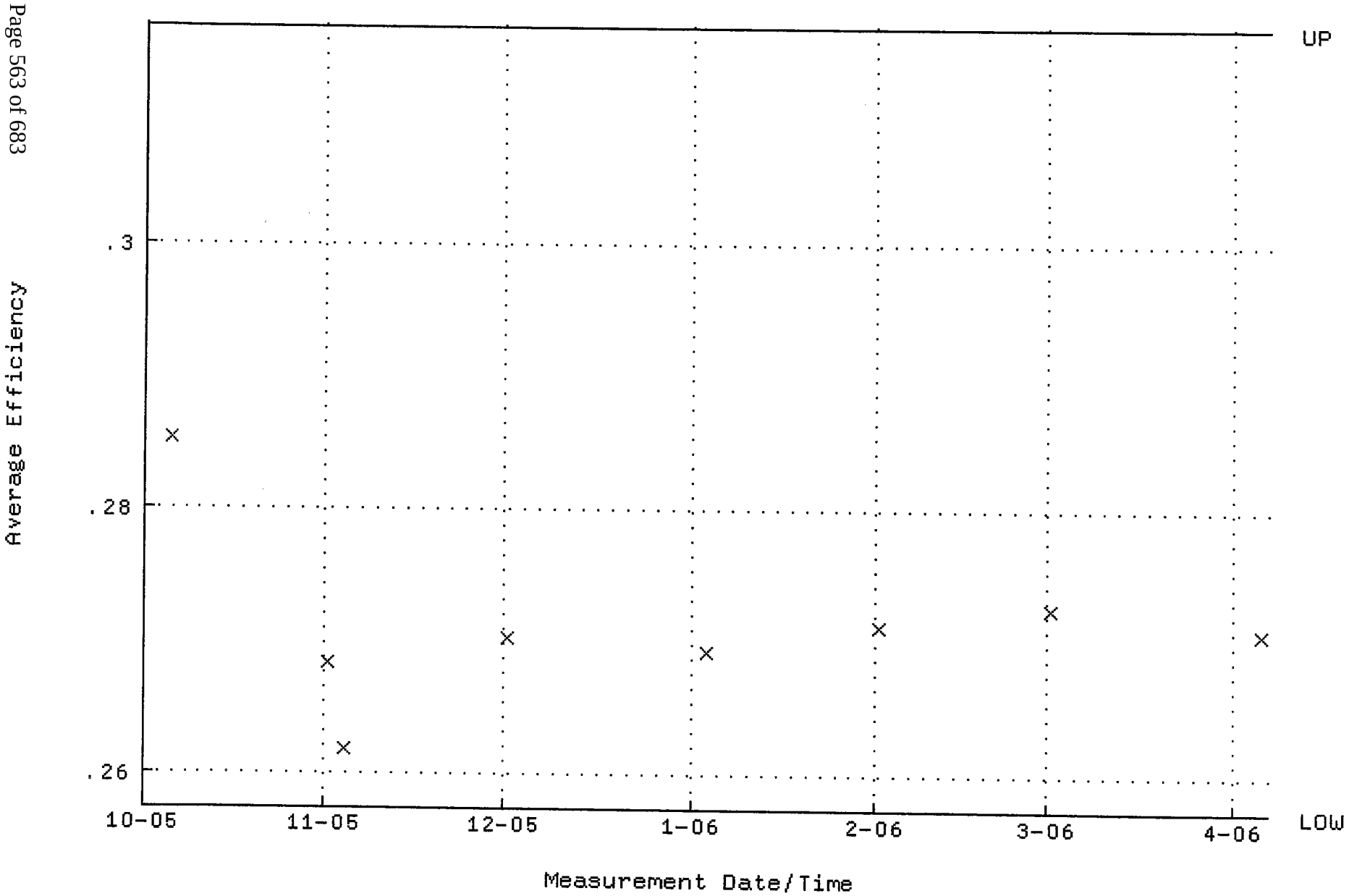
QA filename : DKA100:[ENV_ALPHA.QA.W]W080.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



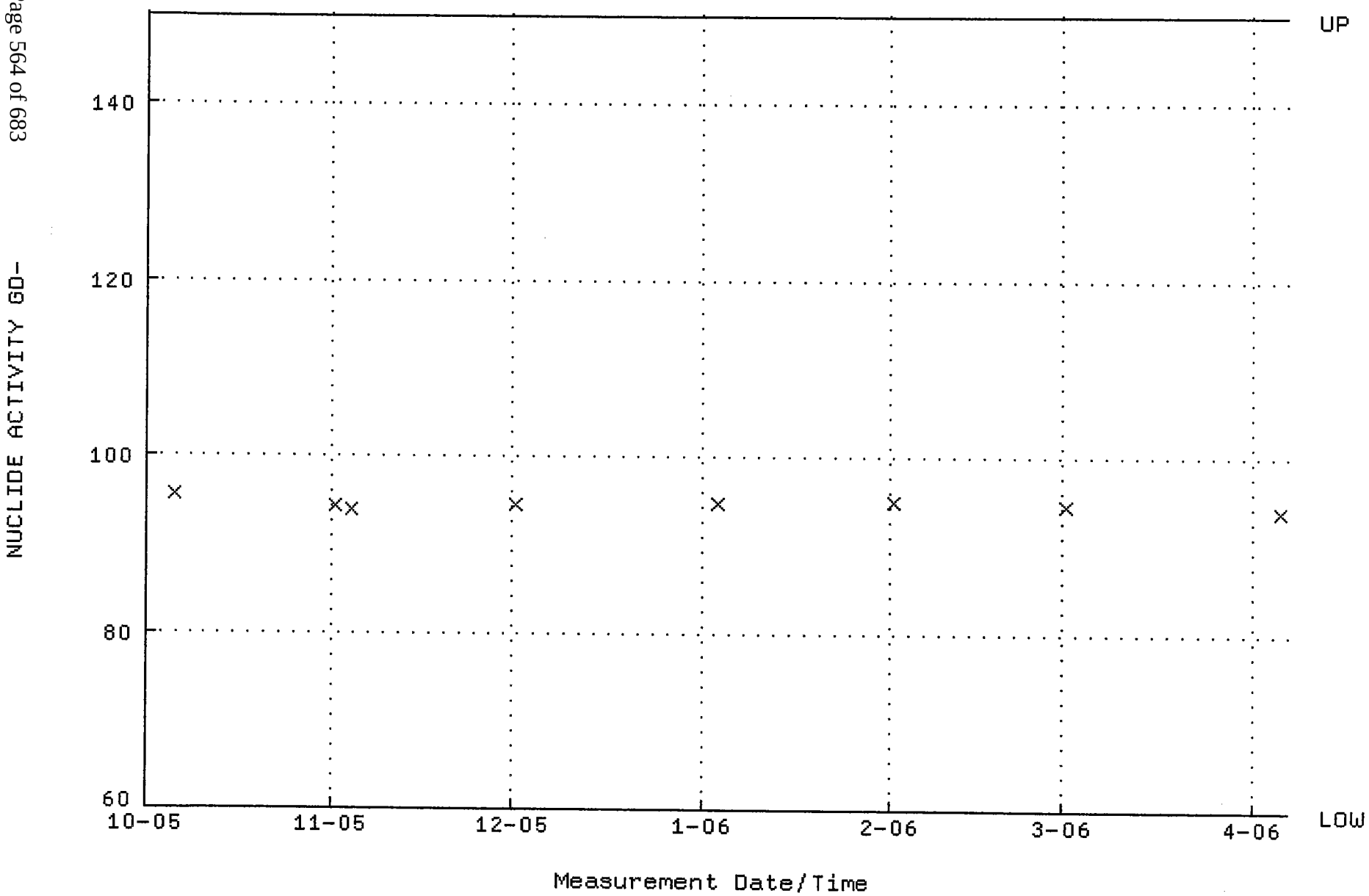
QA filename : DKA100:[ENV_ALPHA.QA.B]B080.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:57:18 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



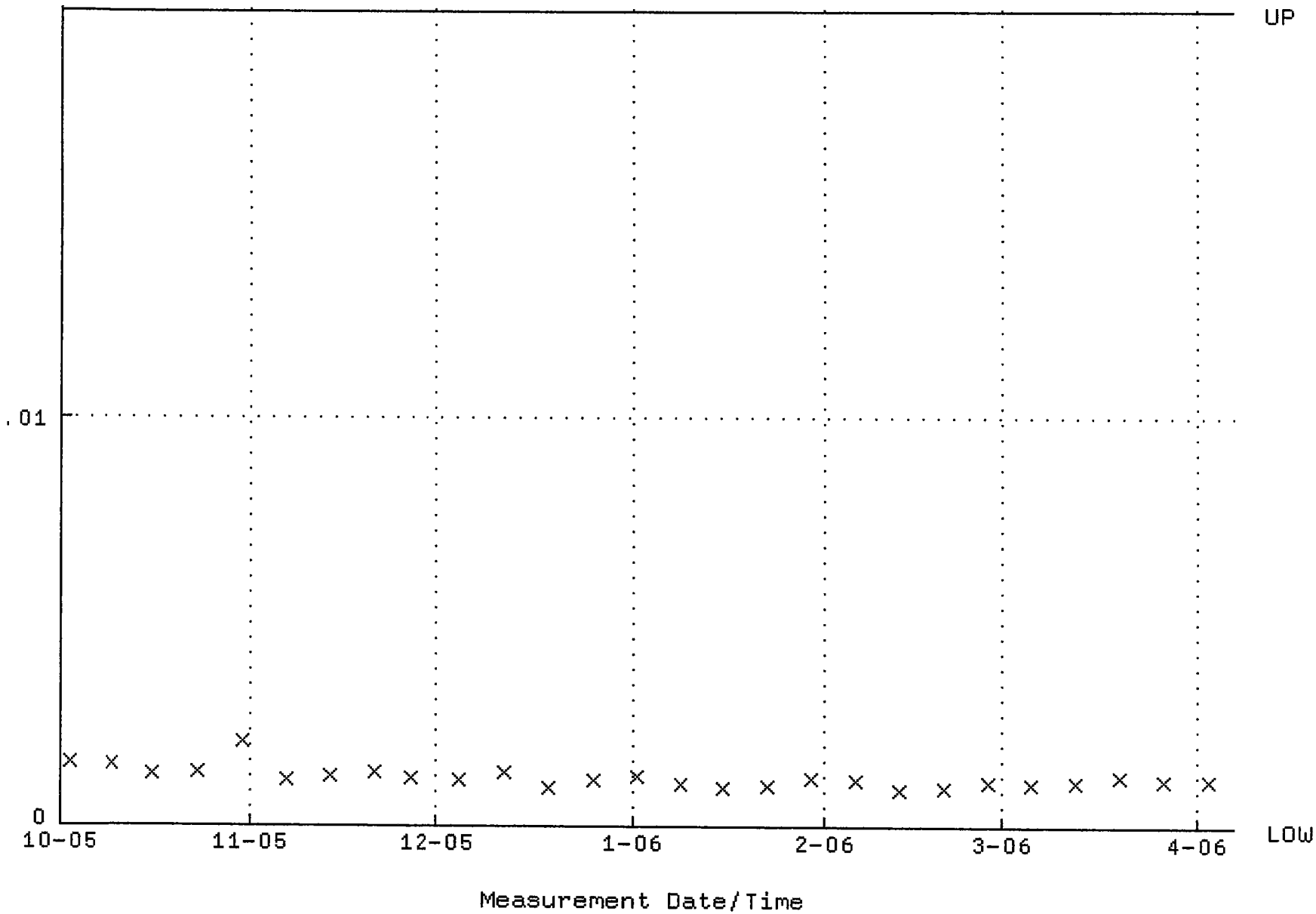
QA filename : DKA100:[ENV_ALPHA.QA.W]W081.QAF;5
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.257434 through 0.316366



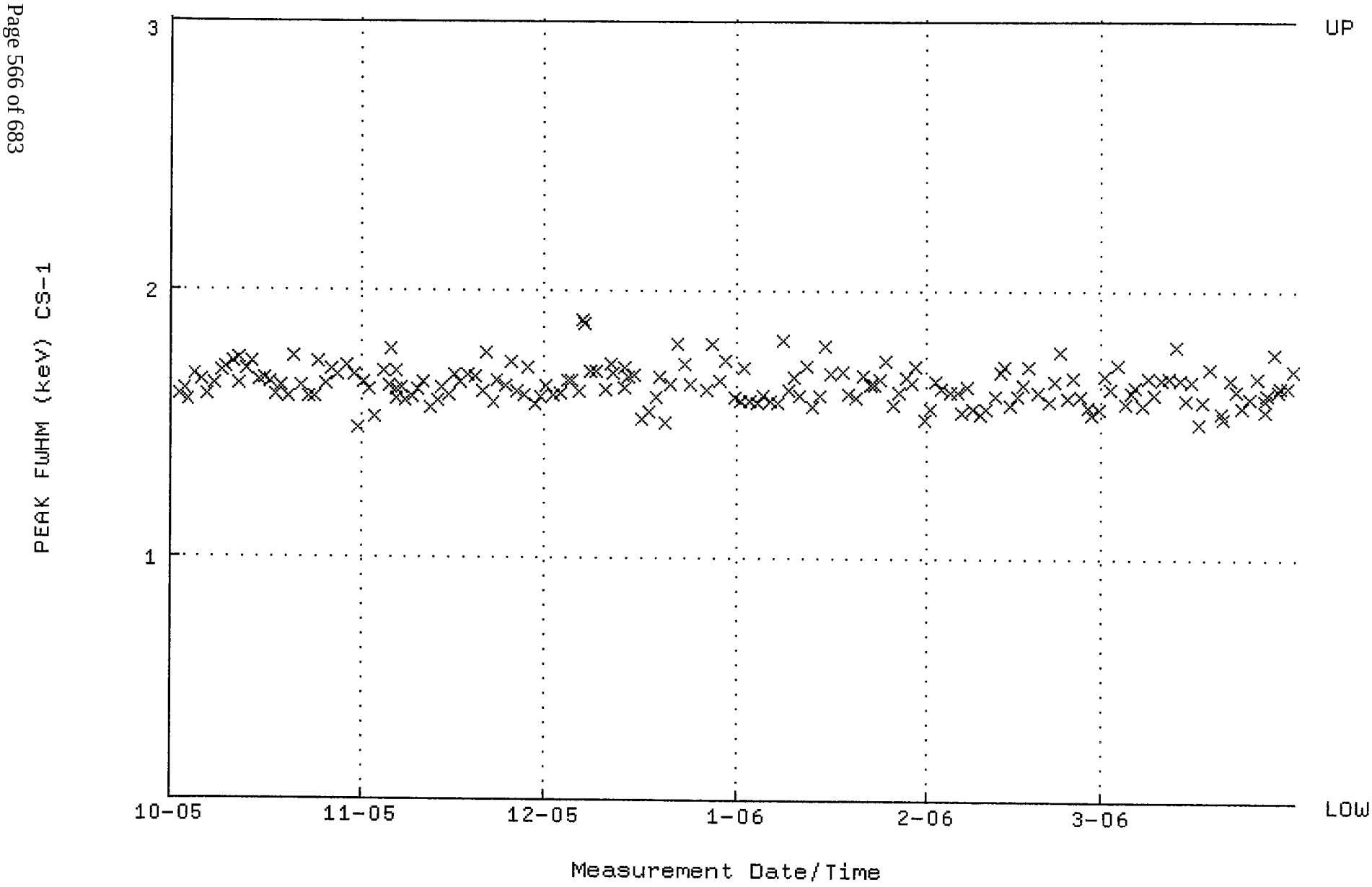
QA filename : DKA100:[ENV_ALPHA.QA.W]W081.QAF;5
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



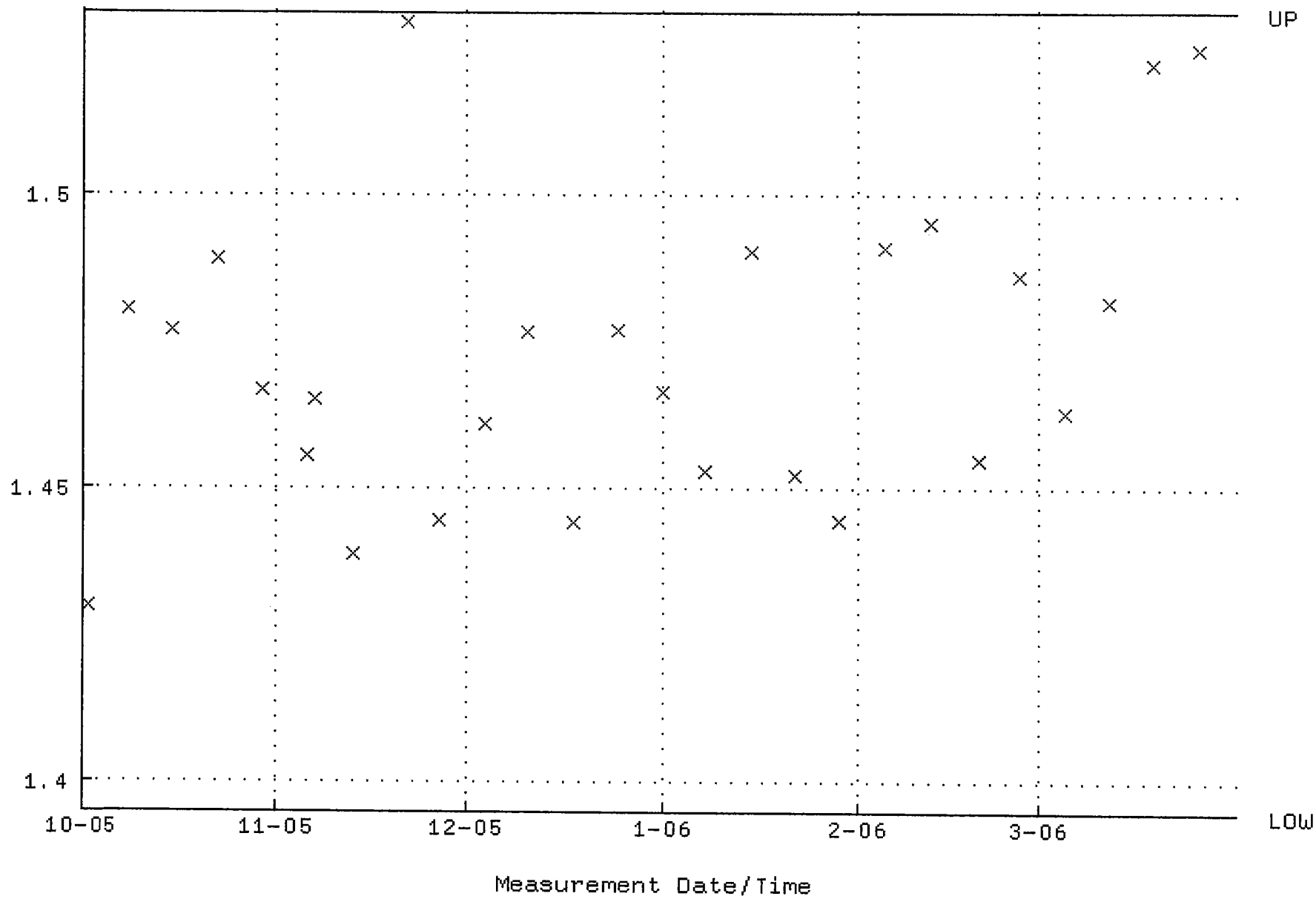
QA filename : DKA100:[ENV_ALPHA.QA.B]B081.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:57:18 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



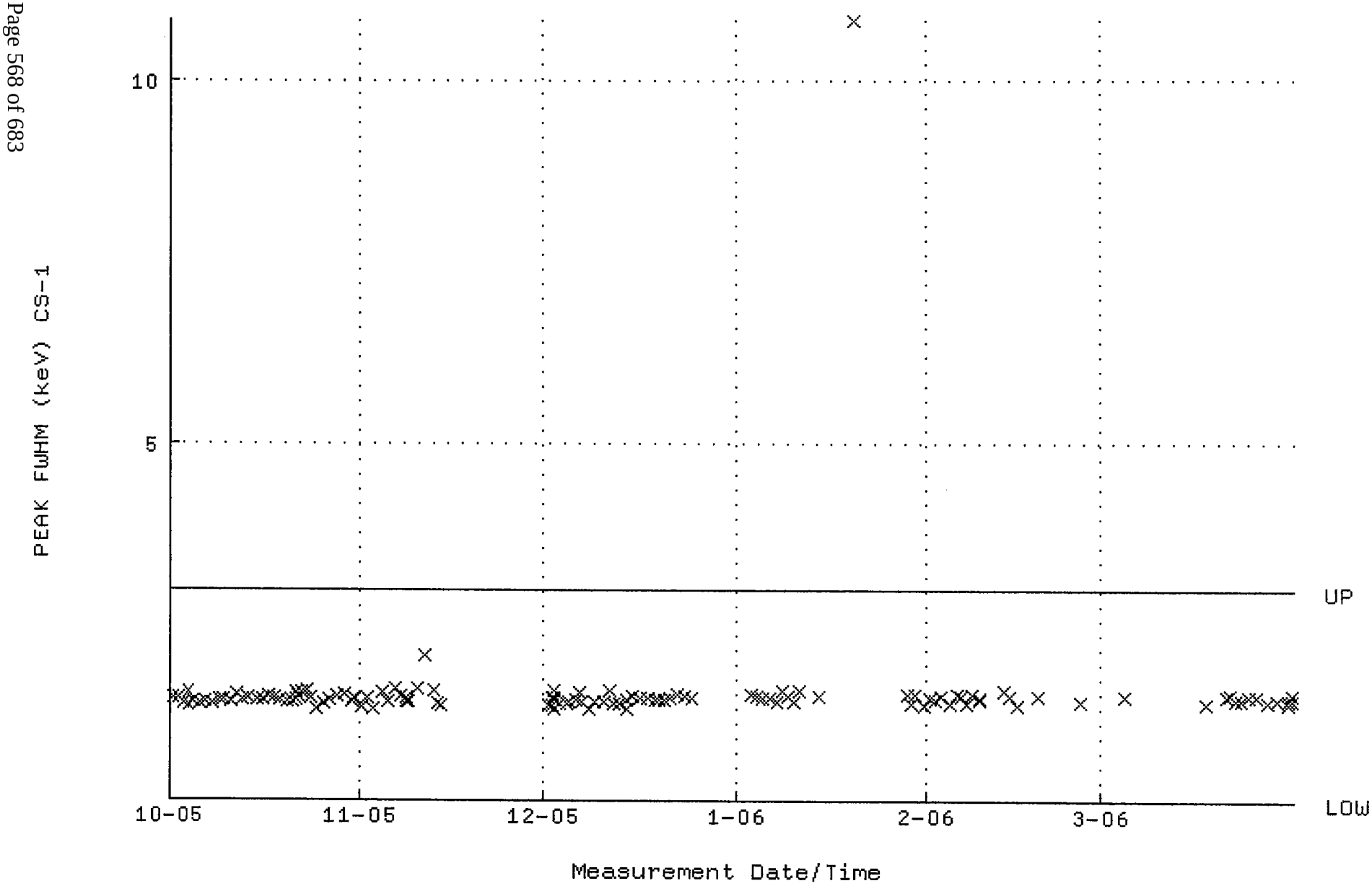
QA filename : DKA100:[ENV_ALPHA]QC_GAMMA9.QAF;3
Parameter Name : PSFWHM-661 (PEAK FWHM (keV) CS-137)
Start/End Dates : 2-OCT-2005 14:46:14 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 0.100000 through 3.00000



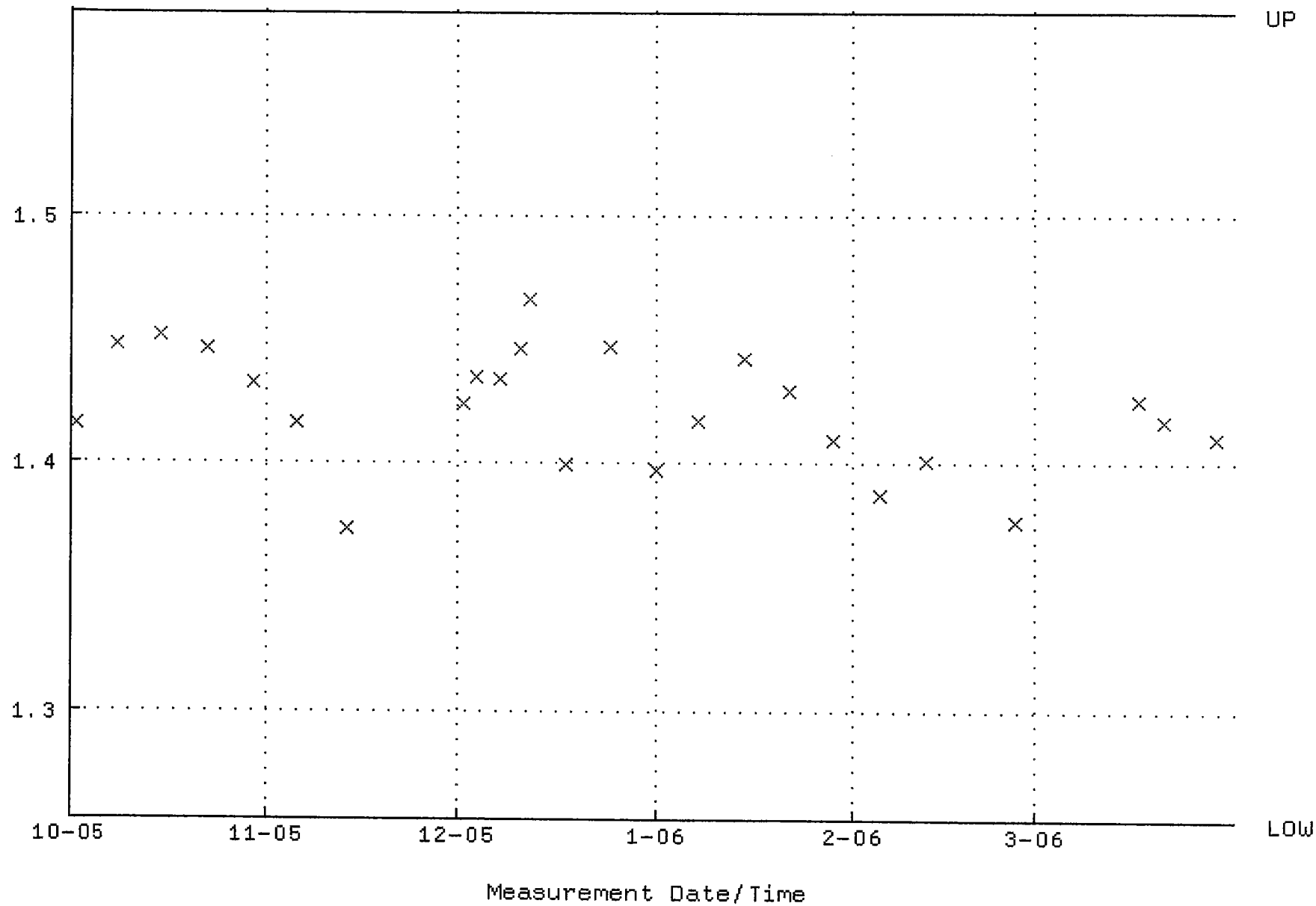
QA filename : DKA100:[ENV_ALPHA]QC_BKG_GAMMA9.QAF;1
Parameter Name : BACKRATE (BACKGROUND (CPS))
Start/End Dates : 1-OCT-2005 21:08:41 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 1.39487 through 1.53113



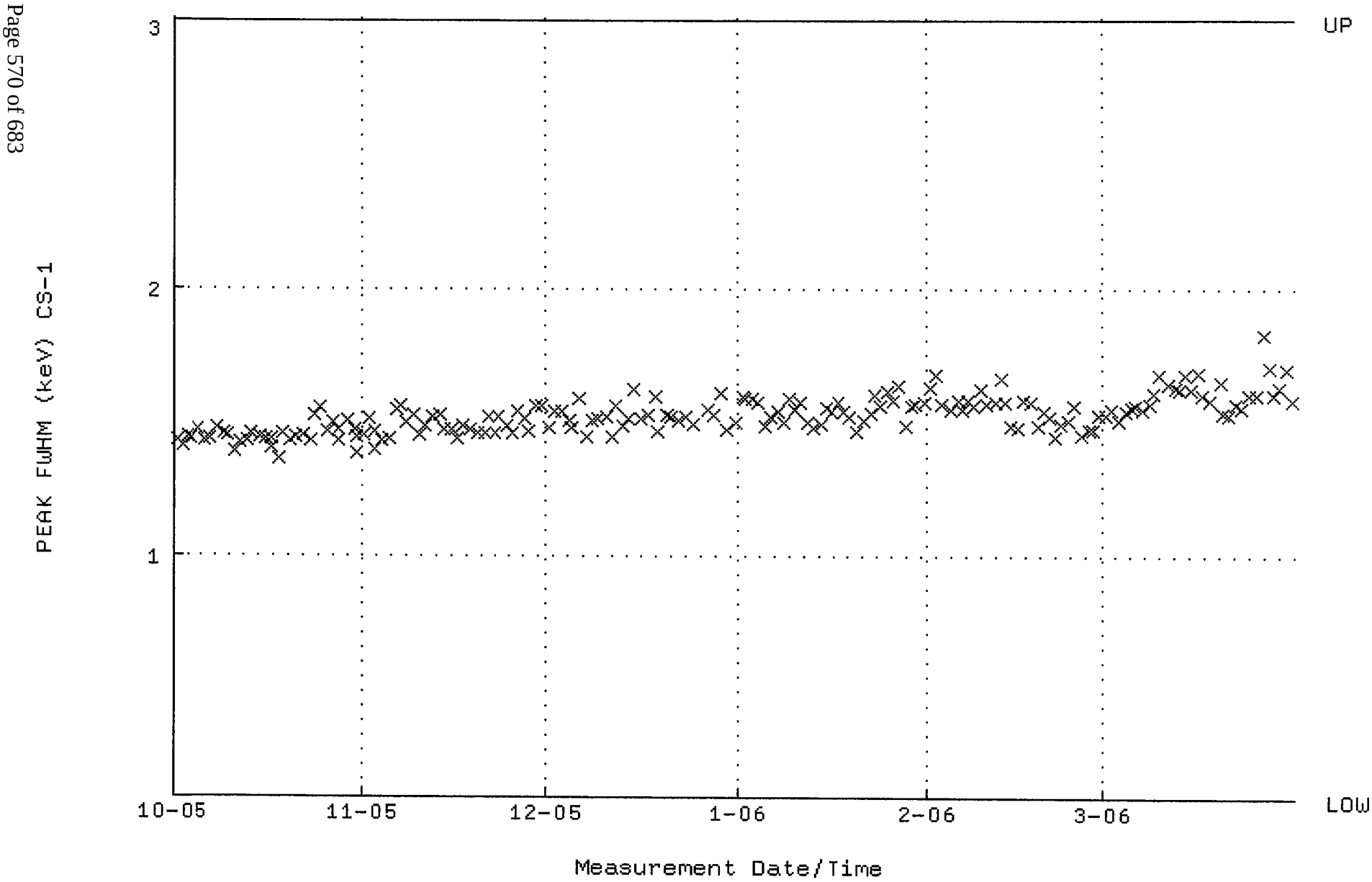
QA filename : DKA100:[ENV_ALPHA]QC_GAMMA16.QAF;2
Parameter Name : PSFWHM-661 (PEAK FWHM (keV) CS-137)
Start/End Dates : 1-OCT-2005 12:08:06 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 0.100000 through 3.00000



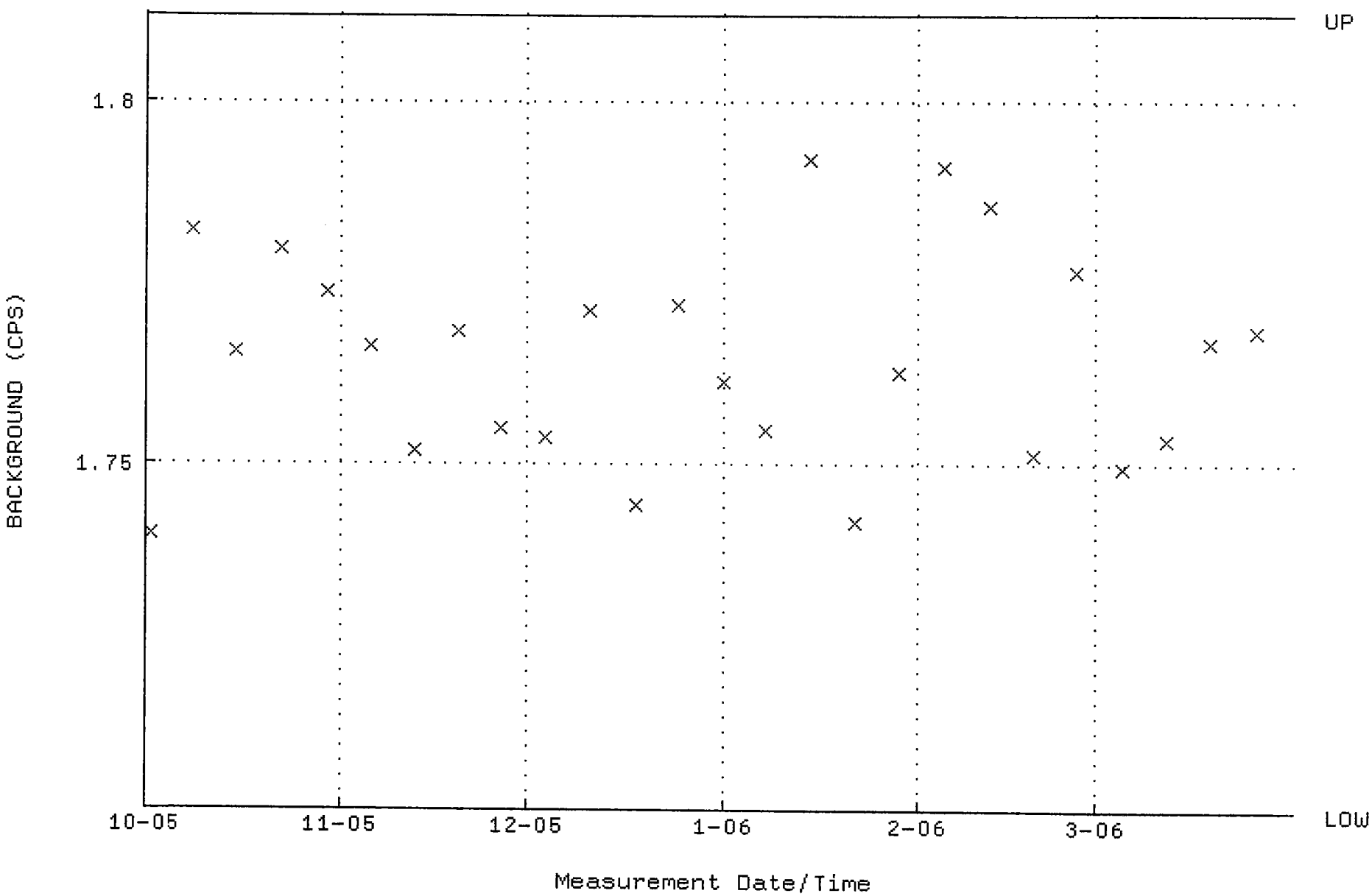
QA filename : DKA100:[ENV_ALPHA]QC_BKG_GAMMA16.QAF;1
Parameter Name : BACKRATE (BACKGROUND (CPS))
Start/End Dates : 1-OCT-2005 21:09:34 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 1.25600 through 1.58211

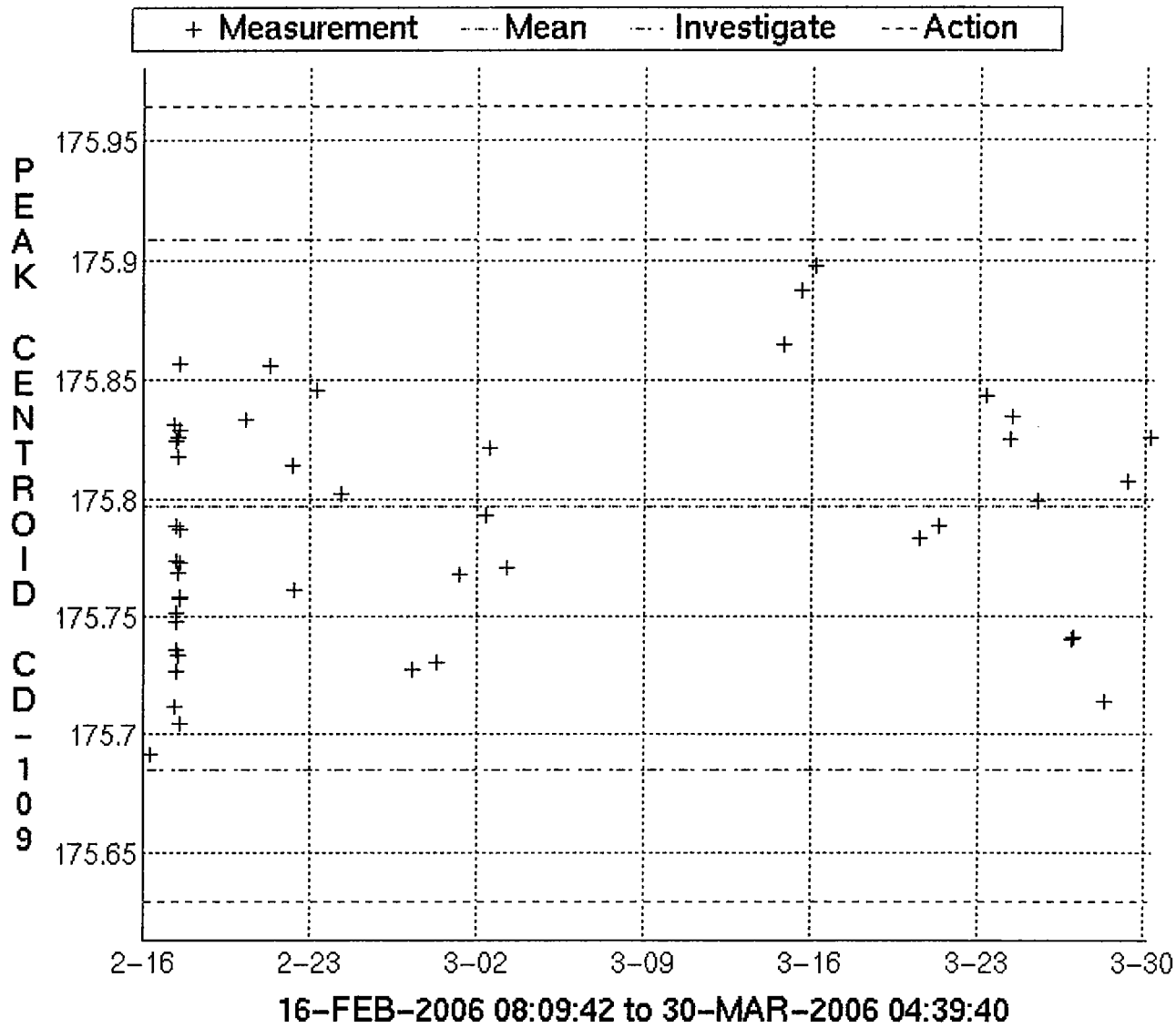


QA filename : DKA100:[ENV_ALPHA]QC_GAMMA17.QAF;3
Parameter Name : PSFWHM-661 (PEAK FWHM (keV) CS-137)
Start/End Dates : 1-OCT-2005 12:08:13 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 0.100000 through 3.00000

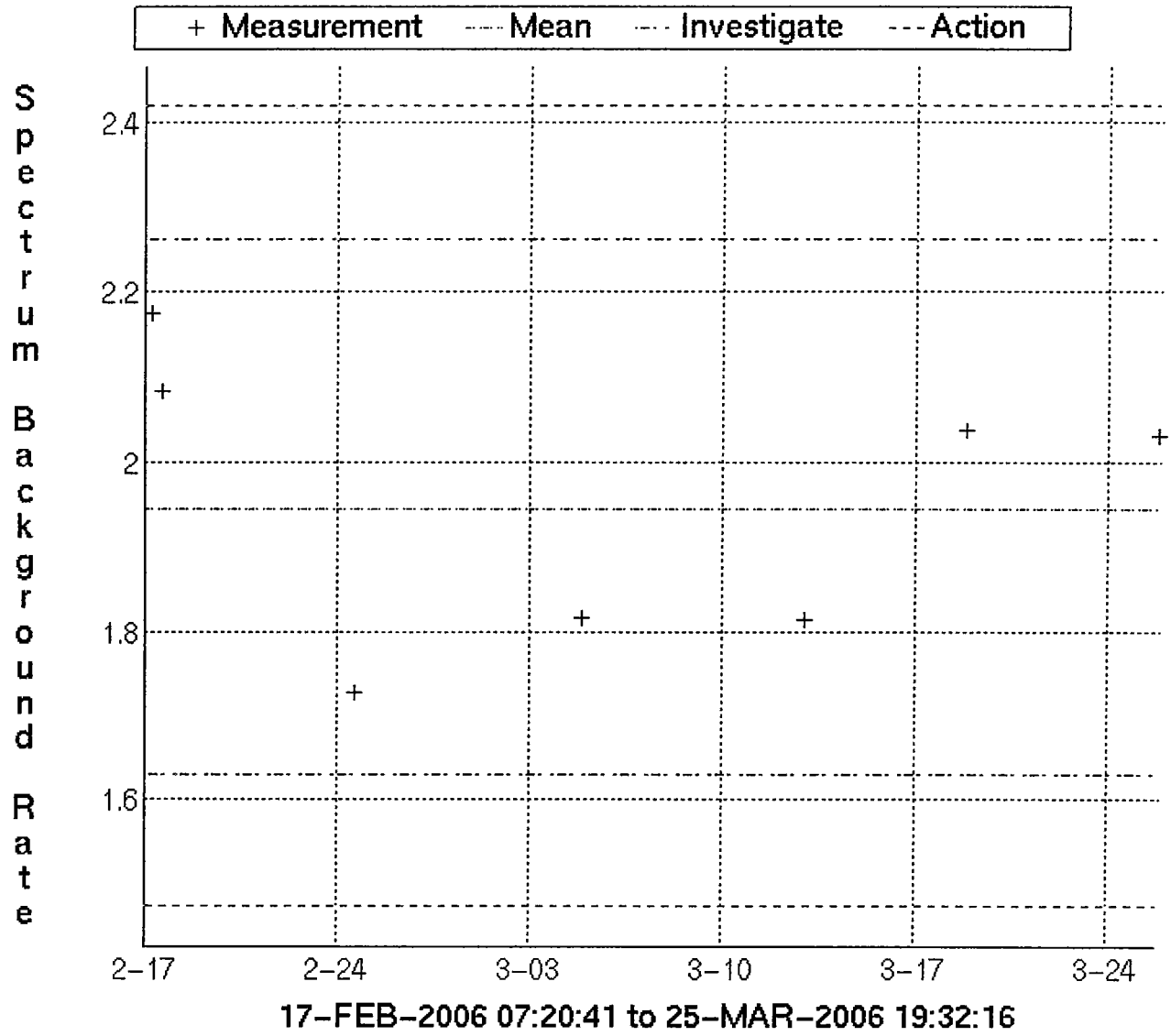


QA filename : DKA100:[ENV_ALPHA]QC_BKG_GAMMA17.QAF;2
Parameter Name : BACKRATE (BACKGROUND (CPS))
Start/End Dates : 1-OCT-2005 21:09:41 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 1.70200 through 1.81200



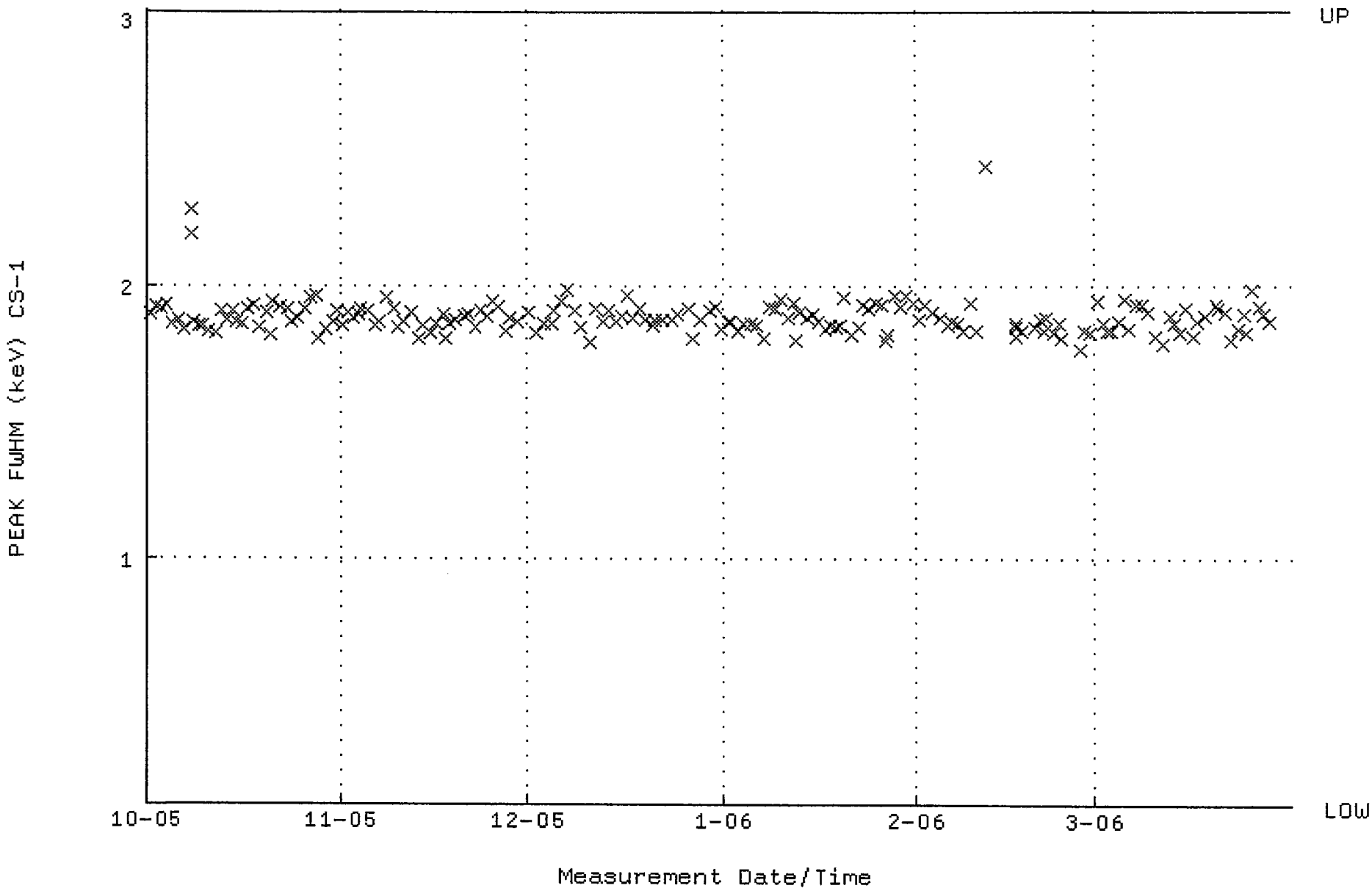


QA Filename:	**DKA0:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM19_CAN**
Parameter Name:	**PSCENTRD-88 (PEAK CENTROID CD-109)**
Statisics Start/End Dates:	**First data point through Last data point**
Mean +/- Std Dev:	**175.797 ± 0.0558654 (0.03 %)**

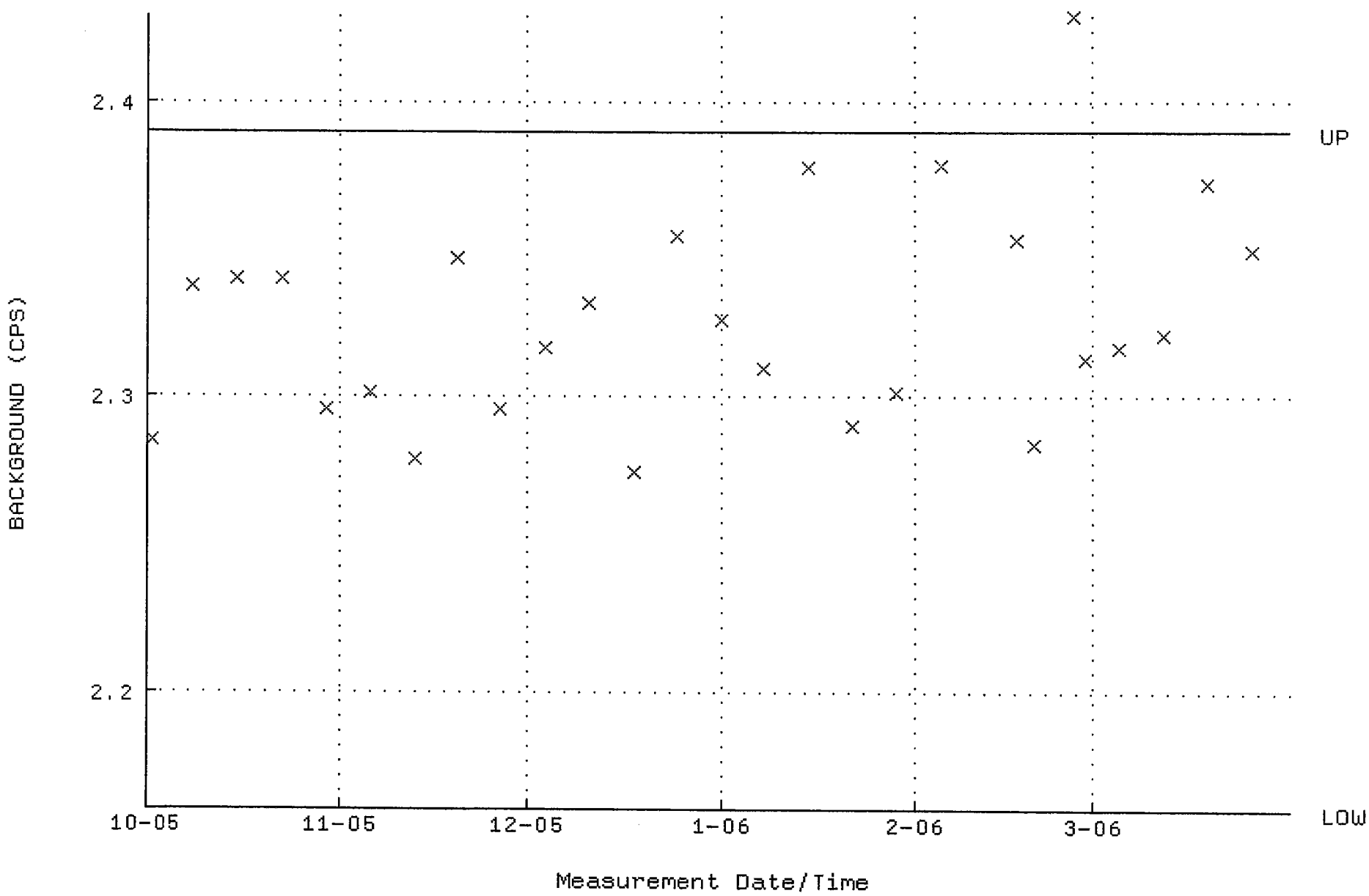


QA Filename:	**DKA0:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM19.QAF;1**
Parameter Name:	**BACKRATE (Spectrum Background Rate)**
Statisics Start/End Dates:	**First data point through Last data point**
Mean +/- Std Dev:	**1.9459 ± 0.157399 (8.09 %)**

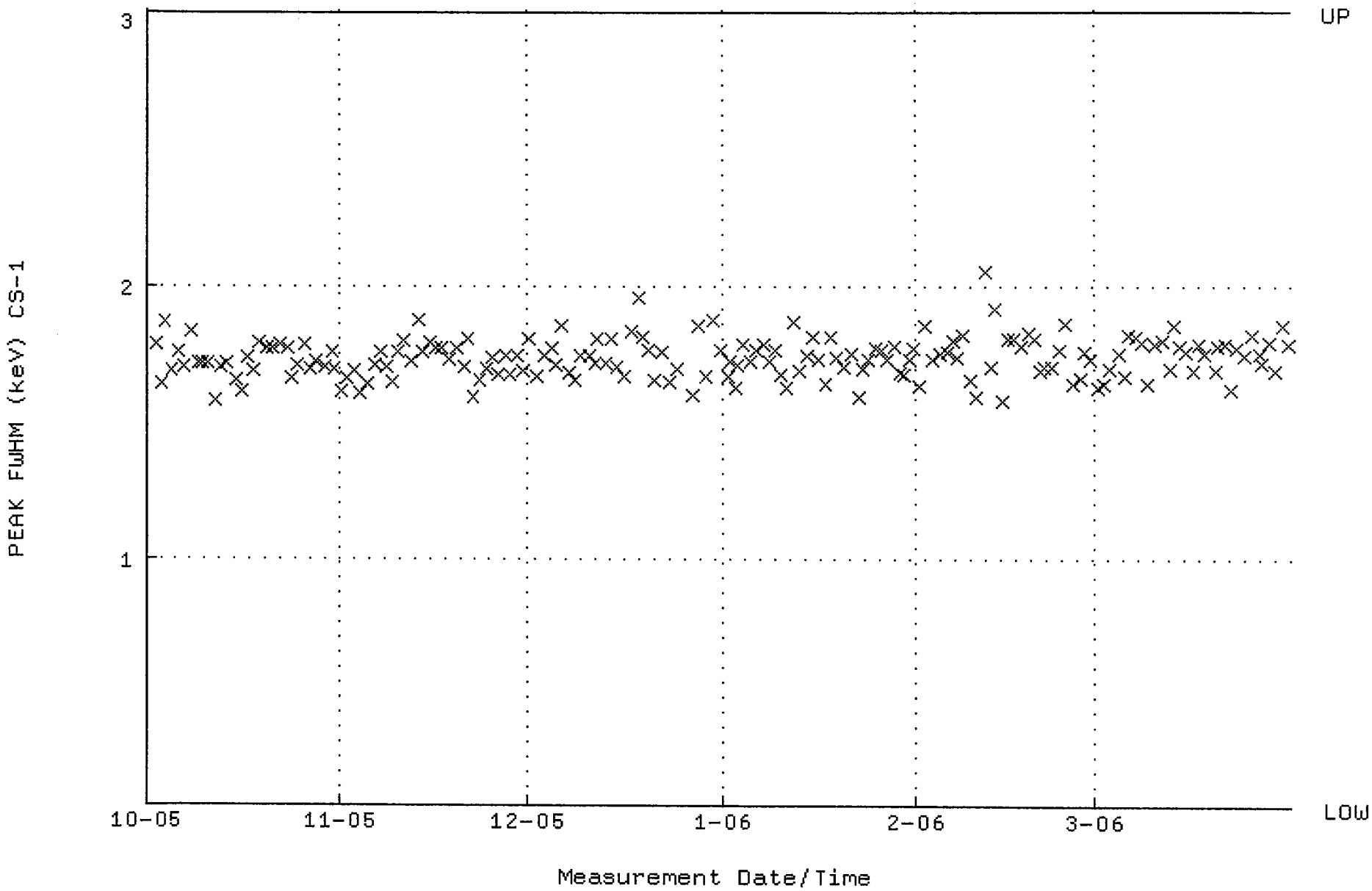
QA filename : DKA100:[ENV_ALPHA]QC_HP.QAF;4
Parameter Name : PSFWHM-661 (PEAK FWHM (keV) CS-137)
Start/End Dates : 1-OCT-2005 17:40:35 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 0.100000 through 3.00000



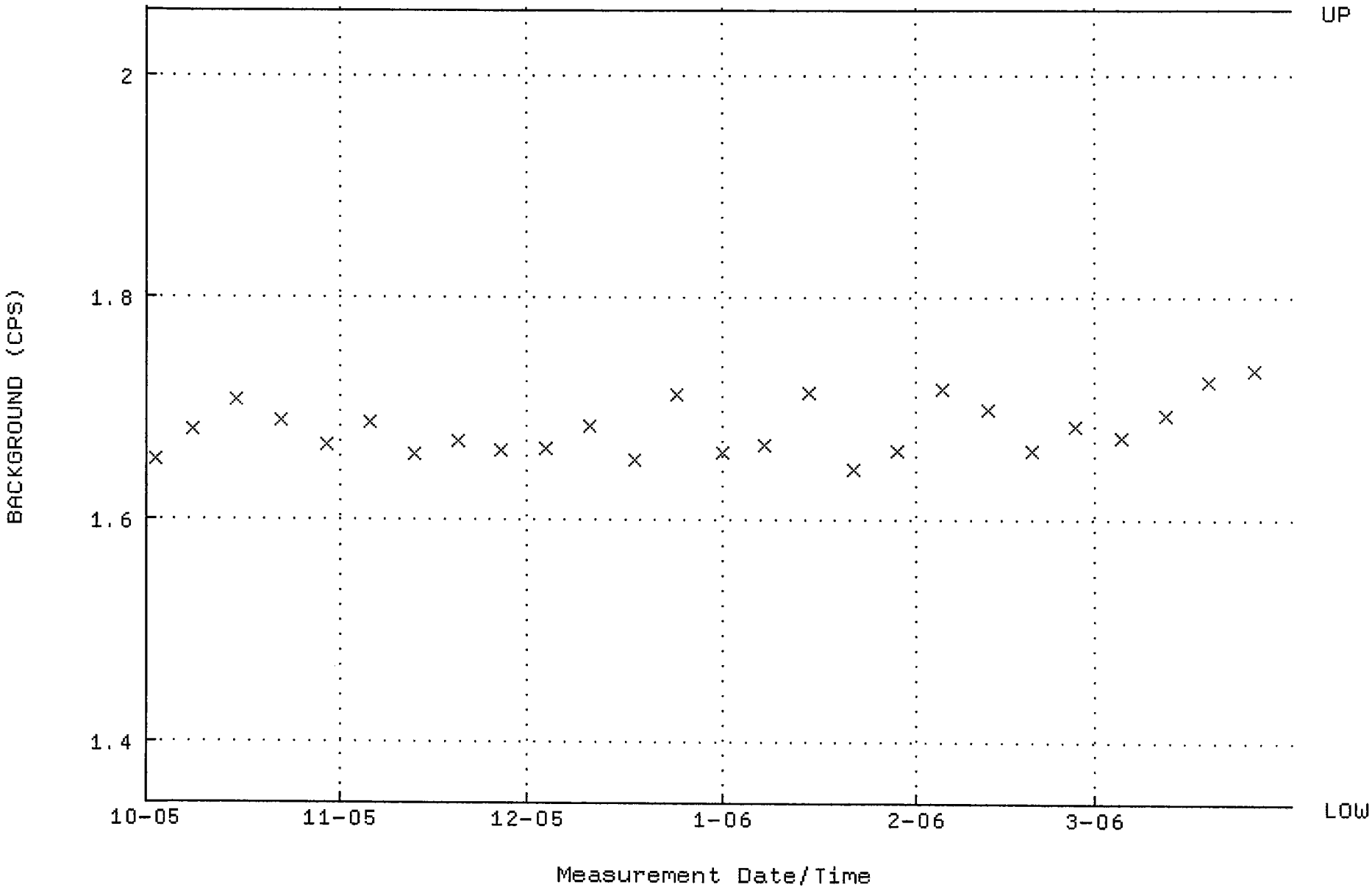
QA filename : DKA100:[ENV_ALPHA]QC_BKG_HP.QAF;1
Parameter Name : BACKRATE (BACKGROUND (CPS))
Start/End Dates : 1-OCT-2005 21:09:56 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 2.16000 through 2.39000



QA filename : DKA100:[ENV_ALPHA]QC_WELL.QAF;4
Parameter Name : PSFWHM-661 (PEAK FWHM (keV) CS-137)
Start/End Dates : 2-OCT-2005 11:34:54 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 0.100000 through 3.00000



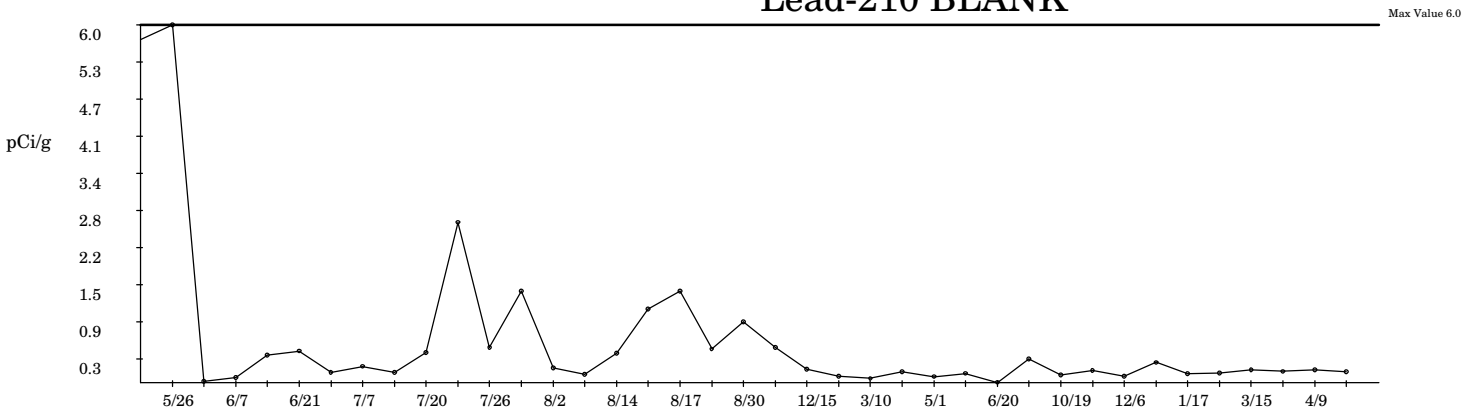
QA filename : DKA100:[ENV_ALPHA]QC_BKG_WELL.QAF;2
Parameter Name : BACKRATE (BACKGROUND (CPS))
Start/End Dates : 2-OCT-2005 11:46:24 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 1.34470 through 2.05930



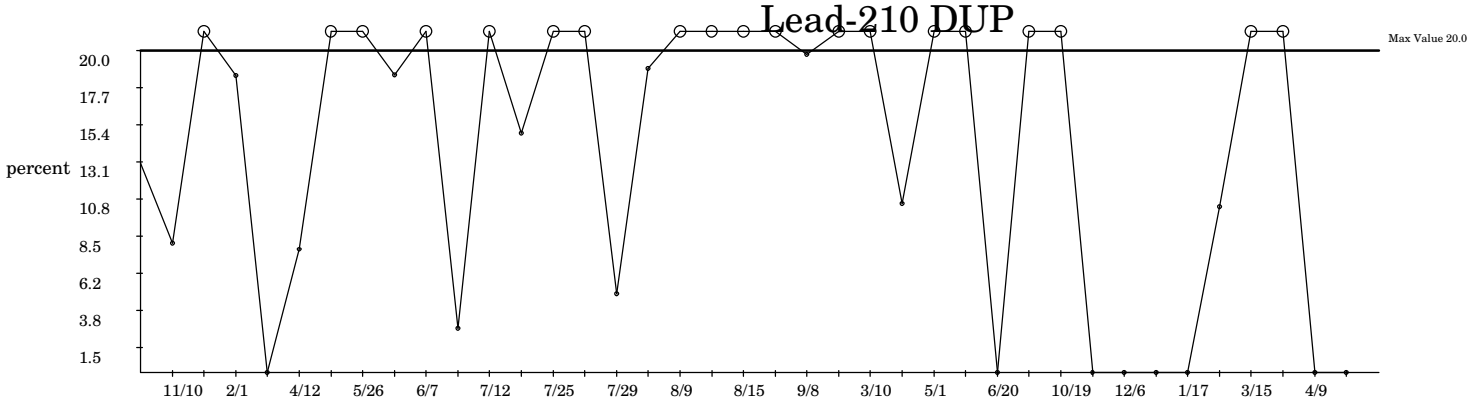
QUALITY CONTROL CHARTS

SPC Graph for Gas Flow Lead-210 in Solids 4/11/2006

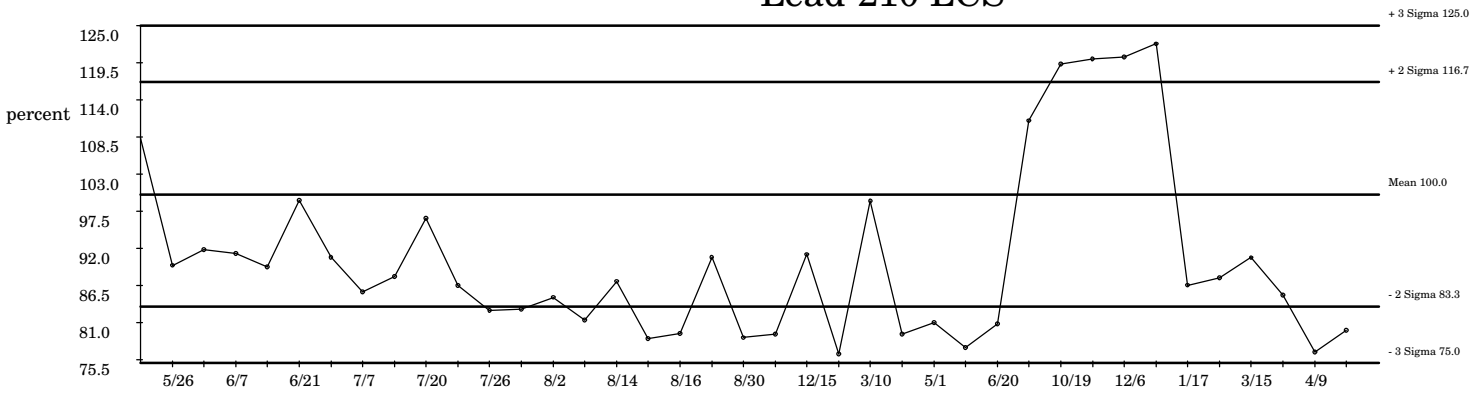
Lead-210 BLANK



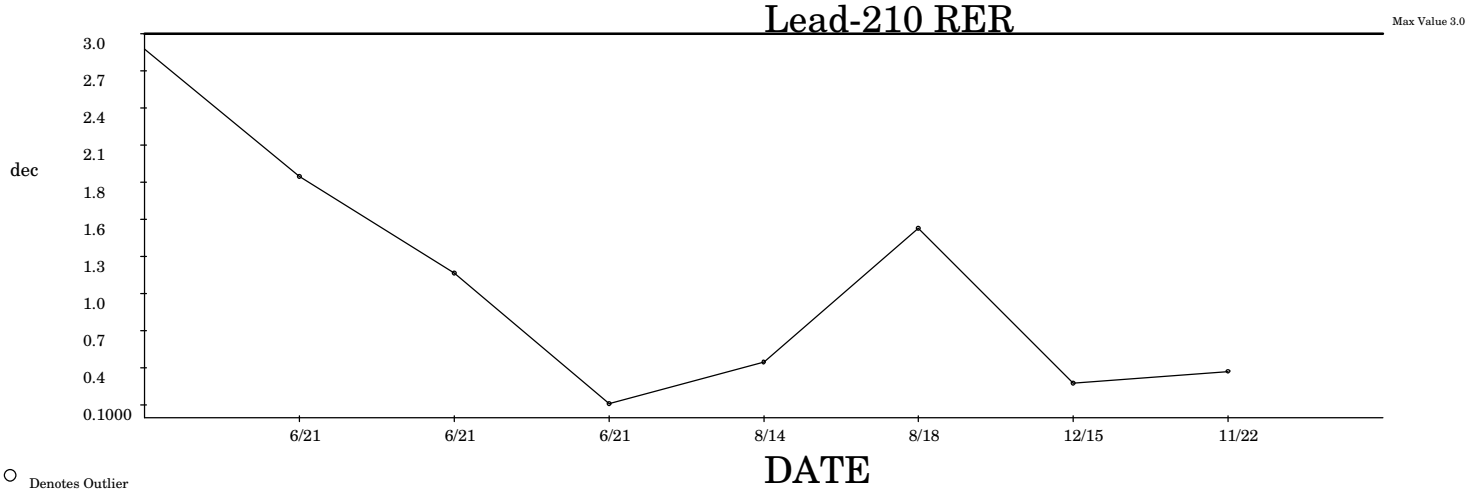
Lead-210 DUP



Lead-210 LCS

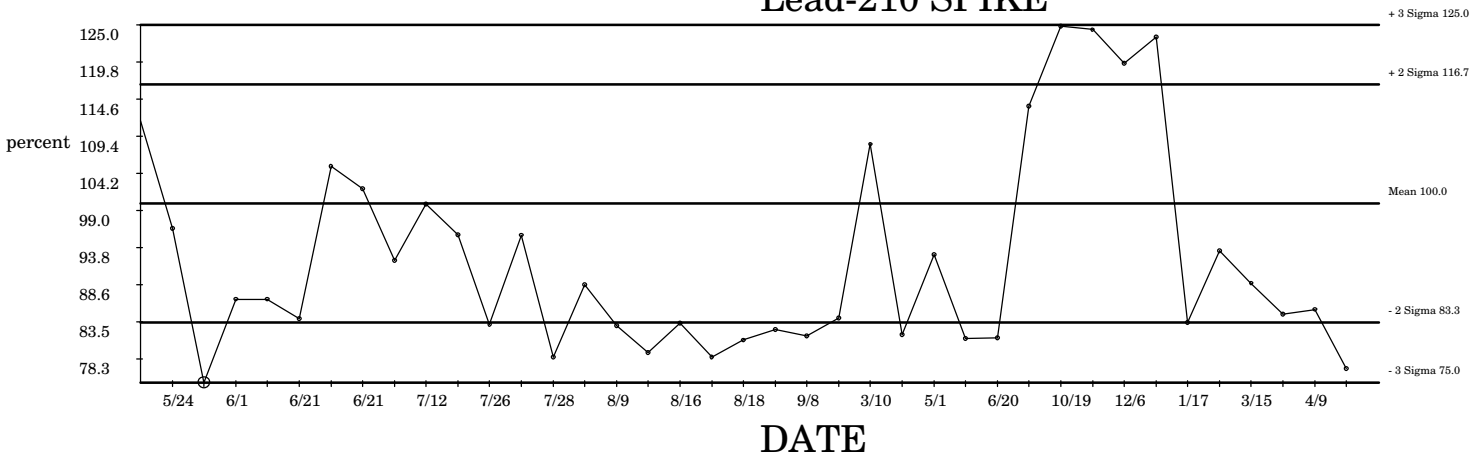


Lead-210 RER



○ Denotes Outlier

SPC Graph for Gas Flow Lead-210 in Solids 4/11/2006
Lead-210 SPIKE



○ Denotes Outlier

Data used for Gas Flow Lead-210 in Solids 12-APR-2006

Lead-210 BLANK: Limits LCL = -2.7 UCL = 3.6

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
330965	1200620138	24-MAY-2004 10:37	DONE	0	-0.3	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
333934	1200626932	26-MAY-2004 12:22	DUSE	6	5.2	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
336451	1200632647	01-JUN-2004 17:50	DONE	0	-0.53	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
337155	1200634385	07-JUN-2004 08:16	DONE	0	-0.47	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
340853	1200643312	21-JUN-2004 09:04	DONE	0	-0.1	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
340852	1200643308	21-JUN-2004 10:24	DONE	0	-0.04	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
340854	1200643316	21-JUN-2004 12:48	DONE	0	-0.39	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
344683	1200652605	07-JUL-2004 11:05	DONE	0	-0.29	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
345863	1200655310	12-JUL-2004 12:24	DONE	0	-0.38	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
346907	1200657807	20-JUL-2004 06:31	DONE	0	-0.07	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
349408	1200663951	25-JUL-2004 20:10	DONE	3	2	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
348807	1200662463	26-JUL-2004 04:52	DONE	0	0.02	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
350666	1200666973	29-JUL-2004 05:47	DONE	1	0.93	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
350579	1200666738	02-AUG-2004 12:51	DONE	0	-0.31	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
352502	1200671517	09-AUG-2004 09:06	DONE	0	-0.41	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
352503	1200671521	14-AUG-2004 03:38	DONE	0	-0.08	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
355295	1200678069	15-AUG-2004 22:03	DONE	1	0.64	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
355768	1200679185	17-AUG-2004 02:18	DONE	1	0.93	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
353310	1200673377	18-AUG-2004 10:42	DONE	0	-0	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
359688	1200688226	30-AUG-2004 04:45	DONE	1	0.43	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
361952	1200693376	08-SEP-2004 16:10	DONE	0	0.02	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
385979	1200751688	15-DEC-2004 09:29	DONE	0	-0.33	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
392820	1200768316	19-JAN-2005 09:26	DONE	0	-0.45	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
405418	1200798077	10-MAR-2005 18:58	DONE	0	-0.48	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
415574	1200822203	17-APR-2005 22:49	DONE	0	-0.38	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
418355	1200829064	01-MAY-2005 22:50	DONE	0	-0.45	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
424026	1200842937	23-MAY-2005 06:55	DONE	0	-0.4	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
429603	1200856585	20-JUN-2005 20:32	DONE	0	-0.54	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
455860	1200919487	30-AUG-2005 07:26	DONE	0	-0.17	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
470738	1200955079	19-OCT-2005 10:43	DONE	0	-0.43	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
479184	1200975538	21-NOV-2005 12:52	DONE	0	-0.36	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
482517	1200983367	06-DEC-2005 10:33	DONE	0	-0.45	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
485401	1200990518	17-DEC-2005 20:40	DONE	0	-0.22	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
491487	1201004535	17-JAN-2006 10:22	DONE	0	-0.41	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
498367	1201020049	07-FEB-2006 10:38	DONE	0	-0.39	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
511471	1201050513	15-MAR-2006 23:30	DONE	0	-0.34	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
511473	1201050521	21-MAR-2006 11:51	DONE	0	-0.37	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
517517	1201063764	09-APR-2006 09:57	DONE	0	-0.34	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05
517518	1201063770	11-APR-2006 12:48	DONE	0	-0.38	pCi/g	0.45	-2.7	-1.6	2.55	3.61	1.05

Lead-210 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
273724	1200481614	08-SEP-2003 13:12	DONE	7	-0.79	percent	29.8	0	-28	87.3	20.0	28.8
288690	1200518946	10-NOV-2003 14:40	DONE	8	-0.76	percent	29.8	0	-28	87.3	20.0	28.8
288976	1200519739	19-NOV-2003 14:31	DONE	62	1.1	percent	29.8	0	-28	87.3	20.0	28.8
305923	1200560409	01-FEB-2004 15:46	DONE	18	-0.4	percent	29.8	0	-28	87.3	20.0	28.8

307587	1200564193	16-FEB-2004 12:32	DONE	0	-1	percent	29.8	0	-28	87.3	20.0	28.8
322629	1200600730	12-APR-2004 11:07	DONE	8	-0.77	percent	29.8	0	-28	87.3	20.0	28.8
330965	1200620139	24-MAY-2004 10:37	DONE	39	0.32	percent	29.8	0	-28	87.3	20.0	28.8
333934	1200626933	26-MAY-2004 12:22	DUSE	92	2.2	percent	29.8	0	-28	87.3	20.0	28.8
336451	1200632648	01-JUN-2004 17:50	DONE	19	-0.39	percent	29.8	0	-28	87.3	20.0	28.8
337155	1200634386	07-JUN-2004 08:16	DONE	42	0.44	percent	29.8	0	-28	87.3	20.0	28.8
344683	1200652606	07-JUL-2004 11:05	DONE	3	-0.94	percent	29.8	0	-28	87.3	20.0	28.8
345863	1200655311	12-JUL-2004 12:24	DONE	27	-0.11	percent	29.8	0	-28	87.3	20.0	28.8
346907	1200657808	20-JUL-2004 06:31	DONE	15	-0.52	percent	29.8	0	-28	87.3	20.0	28.8
349408	1200663952	25-JUL-2004 20:10	DONE	28	-0.07	percent	29.8	0	-28	87.3	20.0	28.8
348807	1200662464	26-JUL-2004 04:52	DONE	52	0.76	percent	29.8	0	-28	87.3	20.0	28.8
350666	1200666974	29-JUL-2004 05:47	DONE	5	-0.87	percent	29.8	0	-28	87.3	20.0	28.8
350579	1200666739	02-AUG-2004 12:51	DONE	19	-0.38	percent	29.8	0	-28	87.3	20.0	28.8
352502	1200671518	09-AUG-2004 09:06	DONE	80	1.7	percent	29.8	0	-28	87.3	20.0	28.8
355295	1200678070	15-AUG-2004 22:03	DONE	63	1.2	percent	29.8	0	-28	87.3	20.0	28.8
355768	1200679186	15-AUG-2004 22:03	DONE	62	1.1	percent	29.8	0	-28	87.3	20.0	28.8
359688	1200688227	30-AUG-2004 04:45	DONE	95	2.3	percent	29.8	0	-28	87.3	20.0	28.8
361952	1200693377	08-SEP-2004 16:10	DONE	20	-0.35	percent	29.8	0	-28	87.3	20.0	28.8
392820	1200768317	19-JAN-2005 09:26	DONE	39	0.32	percent	29.8	0	-28	87.3	20.0	28.8
405418	1200798078	10-MAR-2005 18:58	DONE	54	0.85	percent	29.8	0	-28	87.3	20.0	28.8
415574	1200822204	17-APR-2005 22:49	DONE	11	-0.67	percent	29.8	0	-28	87.3	20.0	28.8
418355	1200829065	01-MAY-2005 22:50	DONE	30	-0	percent	29.8	0	-28	87.3	20.0	28.8
424026	1200842938	23-MAY-2005 06:55	DONE	26	-0.14	percent	29.8	0	-28	87.3	20.0	28.8
429603	1200856586	20-JUN-2005 20:32	DONE	0	-1	percent	29.8	0	-28	87.3	20.0	28.8
455860	1200919488	30-AUG-2005 07:26	DONE	28	-0.07	percent	29.8	0	-28	87.3	20.0	28.8
470738	1200955080	19-OCT-2005 10:43	DONE	57	0.95	percent	29.8	0	-28	87.3	20.0	28.8
479184	1200975539	22-NOV-2005 09:38	DONE	0	-1	percent	29.8	0	-28	87.3	20.0	28.8
482517	1200983368	06-DEC-2005 10:34	DONE	0	-1	percent	29.8	0	-28	87.3	20.0	28.8
485401	1200990519	17-DEC-2005 20:40	DONE	0	-1	percent	29.8	0	-28	87.3	20.0	28.8
491487	1201004536	17-JAN-2006 10:22	DONE	0	-1	percent	29.8	0	-28	87.3	20.0	28.8
498367	1201020050	07-FEB-2006 10:38	DONE	10	-0.68	percent	29.8	0	-28	87.3	20.0	28.8
511471	1201050514	15-MAR-2006 23:34	DONE	63	1.2	percent	29.8	0	-28	87.3	20.0	28.8
511473	1201050522	21-MAR-2006 11:52	DONE	84	1.9	percent	29.8	0	-28	87.3	20.0	28.8
517517	1201063765	09-APR-2006 09:57	DONE	0	-1	percent	29.8	0	-28	87.3	20.0	28.8
517518	1201063771	11-APR-2006 12:49	DONE	0	-1	percent	29.8	0	-28	87.3	20.0	28.8

Lead-210 LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
330965	1200620141	24-MAY-2004 10:37	DONE	92	-01	percent	100	75.0	83.3	117	125	8.33
333934	1200626935	26-MAY-2004 12:22	DUSE	89	-1	percent	100	75.0	83.3	117	125	8.33
336451	1200632650	01-JUN-2004 10:35	DONE	92	-0.98	percent	100	75.0	83.3	117	125	8.33
337155	1200634388	07-JUN-2004 08:16	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
340853	1200643315	21-JUN-2004 09:04	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
340852	1200643311	21-JUN-2004 10:24	DONE	99	-0.11	percent	100	75.0	83.3	117	125	8.33
340854	1200643319	21-JUN-2004 14:14	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
344683	1200652608	07-JUL-2004 11:05	DONE	86	-2	percent	100	75.0	83.3	117	125	8.33
345863	1200655313	12-JUL-2004 15:05	DONE	88	-1	percent	100	75.0	83.3	117	125	8.33
346907	1200657810	20-JUL-2004 12:08	DONE	96	-0.43	percent	100	75.0	83.3	117	125	8.33
348807	1200662466	26-JUL-2004 09:43	DONE	86	-2	percent	100	75.0	83.3	117	125	8.33
349408	1200663954	26-JUL-2004 09:43	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33

350666	1200666976	28-JUL-2004 18:25	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
350579	1200666741	02-AUG-2004 12:51	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
352502	1200671520	09-AUG-2004 09:06	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
352503	1200671524	14-AUG-2004 03:39	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
355295	1200678072	16-AUG-2004 08:54	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
355768	1200679188	16-AUG-2004 08:57	DONE	79	-2	percent	100	75.0	83.3	117	125	8.33
353310	1200673380	18-AUG-2004 10:42	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
359688	1200688229	30-AUG-2004 11:32	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
361952	1200693379	08-SEP-2004 08:49	DONE	79	-2	percent	100	75.0	83.3	117	125	8.33
385979	1200751690	15-DEC-2004 09:29	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
392820	1200768319	19-JAN-2005 07:26	DONE	76	-3	percent	100	75.0	83.3	117	125	8.33
405418	1200798080	10-MAR-2005 18:58	DONE	99	-0.12	percent	100	75.0	83.3	117	125	8.33
415574	1200822206	26-APR-2005 08:20	DONE	79	-2	percent	100	75.0	83.3	117	125	8.33
418355	1200829067	01-MAY-2005 22:49	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
424026	1200842940	23-MAY-2005 06:55	DONE	77	-3	percent	100	75.0	83.3	117	125	8.33
429603	1200856588	20-JUN-2005 21:37	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
455860	1200919490	30-AUG-2005 07:26	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
470738	1200955082	19-OCT-2005 10:43	DONE	119	2.3	percent	100	75.0	83.3	117	125	8.33
479184	1200975541	20-NOV-2005 23:00	DONE	120	2.4	percent	100	75.0	83.3	117	125	8.33
482517	1200983370	06-DEC-2005 10:34	DONE	120	2.4	percent	100	75.0	83.3	117	125	8.33
485401	1200990521	17-DEC-2005 21:33	DONE	122	2.7	percent	100	75.0	83.3	117	125	8.33
491487	1201004538	17-JAN-2006 10:23	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
498367	1201020052	07-FEB-2006 12:13	DONE	88	-1	percent	100	75.0	83.3	117	125	8.33
511471	1201050516	15-MAR-2006 23:30	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
511473	1201050524	21-MAR-2006 11:52	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
517517	1201063767	09-APR-2006 09:57	DONE	77	-3	percent	100	75.0	83.3	117	125	8.33
517518	1201063773	11-APR-2006 12:49	DONE	80	-2	percent	100	75.0	83.3	117	125	8.33

Lead-210 RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
273724	1200481614	08-SEP-2003 13:12	DONE	0.12	-0.89	dec	0.72	0	-0.638	2.09	3.00	0.68
340853	1200643313	21-JUN-2004 09:04	DONE	1.89	1.7	dec	0.72	0	-0.638	2.09	3.00	0.68
340852	1200643309	21-JUN-2004 10:24	DONE	1.13	0.6	dec	0.72	0	-0.638	2.09	3.00	0.68
340854	1200643317	21-JUN-2004 12:48	DONE	0.11	-0.9	dec	0.72	0	-0.638	2.09	3.00	0.68
352503	1200671522	14-AUG-2004 03:39	DONE	0.44	-0.42	dec	0.72	0	-0.638	2.09	3.00	0.68
353310	1200673378	18-AUG-2004 10:42	DONE	1.48	1.1	dec	0.72	0	-0.638	2.09	3.00	0.68
385979	1200751689	15-DEC-2004 09:29	DONE	0.27	-0.67	dec	0.72	0	-0.638	2.09	3.00	0.68
479184	1200975539	22-NOV-2005 09:38	DONE	0.36	-0.53	dec	0.72	0	-0.638	2.09	3.00	0.68

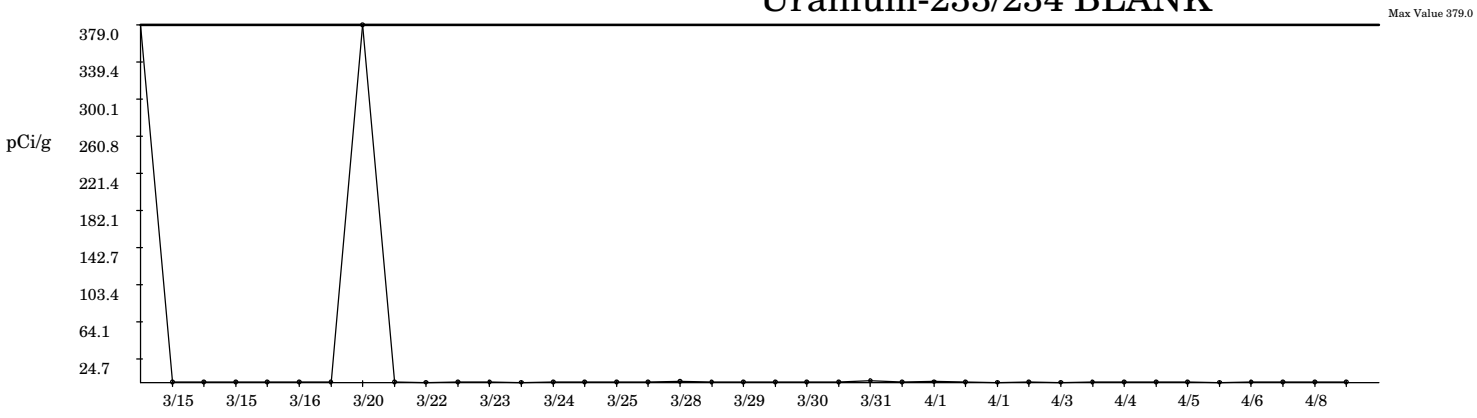
Lead-210 SPIKE: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
322629	1200600731	12-APR-2004 11:07	DONE	88	-1	percent	100	75.0	83.3	117	125	8.33
330965	1200620140	24-MAY-2004 10:37	DONE	97	-0.42	percent	100	75.0	83.3	117	125	8.33
333934	1200626934	26-MAY-2004 12:22	DUSE	-5	-10	percent	100	75.0	83.3	117	125	8.33
336451	1200632649	01-JUN-2004 10:30	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
337155	1200634387	07-JUN-2004 08:16	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
340853	1200643314	21-JUN-2004 09:04	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
340852	1200643310	21-JUN-2004 10:24	DONE	105	0.62	percent	100	75.0	83.3	117	125	8.33
340854	1200643318	21-JUN-2004 14:14	DONE	102	0.25	percent	100	75.0	83.3	117	125	8.33
344683	1200652607	07-JUL-2004 11:05	DONE	92	-0.95	percent	100	75.0	83.3	117	125	8.33

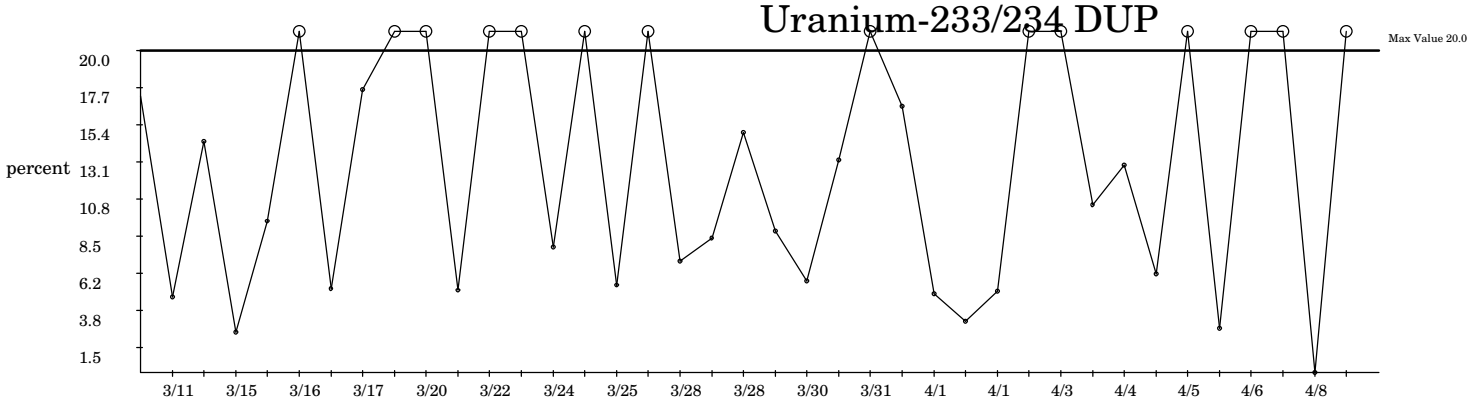
345863	1200655312	12-JUL-2004 15:05	DONE	100	-0.01	percent	100	75.0	83.3	117	125	8.33
346907	1200657809	20-JUL-2004 12:08	DONE	96	-0.52	percent	100	75.0	83.3	117	125	8.33
348807	1200662465	26-JUL-2004 09:43	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
349408	1200663953	26-JUL-2004 09:43	DONE	96	-0.53	percent	100	75.0	83.3	117	125	8.33
350666	1200666975	28-JUL-2004 18:25	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
350579	1200666740	02-AUG-2004 12:51	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
352502	1200671519	09-AUG-2004 09:06	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
352503	1200671523	14-AUG-2004 03:39	DONE	79	-2	percent	100	75.0	83.3	117	125	8.33
355295	1200678071	16-AUG-2004 08:53	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
355768	1200679187	16-AUG-2004 08:57	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
353310	1200673379	18-AUG-2004 10:42	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
359688	1200688228	30-AUG-2004 10:23	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
361952	1200693378	08-SEP-2004 08:49	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
392820	1200768318	19-JAN-2005 07:26	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
405418	1200798079	10-MAR-2005 18:58	DONE	108	01	percent	100	75.0	83.3	117	125	8.33
415574	1200822205	17-APR-2005 22:35	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
418355	1200829066	01-MAY-2005 22:49	DONE	93	-0.86	percent	100	75.0	83.3	117	125	8.33
424026	1200842939	24-MAY-2005 18:27	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
429603	1200856587	20-JUN-2005 20:32	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
455860	1200919489	30-AUG-2005 07:26	DONE	114	1.6	percent	100	75.0	83.3	117	125	8.33
470738	1200955081	19-OCT-2005 10:43	DONE	125	3	percent	100	75.0	83.3	117	125	8.33
479184	1200975540	22-NOV-2005 21:58	DONE	124	2.9	percent	100	75.0	83.3	117	125	8.33
482517	1200983369	06-DEC-2005 10:34	DONE	120	2.4	percent	100	75.0	83.3	117	125	8.33
485401	1200990520	19-DEC-2005 10:52	DONE	123	2.8	percent	100	75.0	83.3	117	125	8.33
491487	1201004537	17-JAN-2006 10:22	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
498367	1201020051	07-FEB-2006 10:38	DONE	93	-0.79	percent	100	75.0	83.3	117	125	8.33
511471	1201050515	15-MAR-2006 23:30	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
511473	1201050523	21-MAR-2006 11:52	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
517517	1201063766	09-APR-2006 09:57	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
517518	1201063772	11-APR-2006 12:49	DONE	77	-3	percent	100	75.0	83.3	117	125	8.33

SPC Graph for Alpha SpecUranium in Solids 4/10/2006

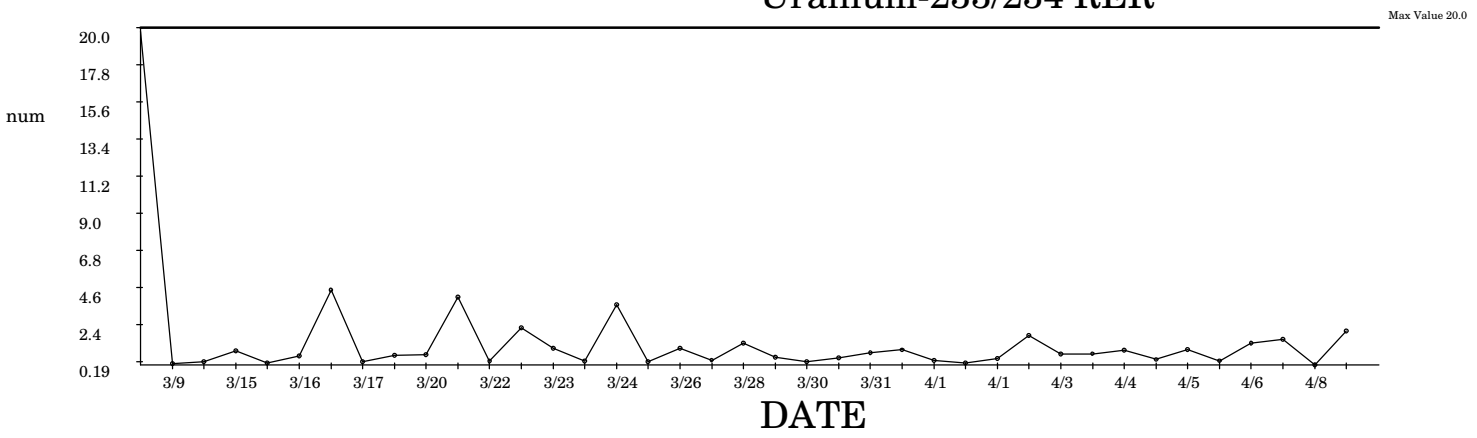
Uranium-233/234 BLANK



Uranium-233/234 DUP



Uranium-233/234 RER



○ Denotes Outlier

SPC Graph for Alpha SpecUranium in Solids 4/10/2006

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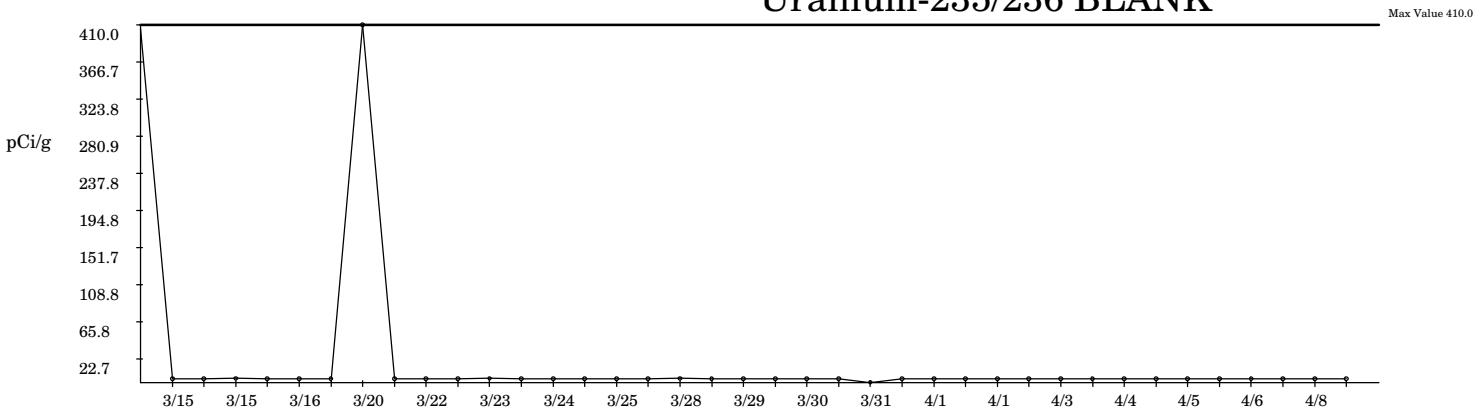

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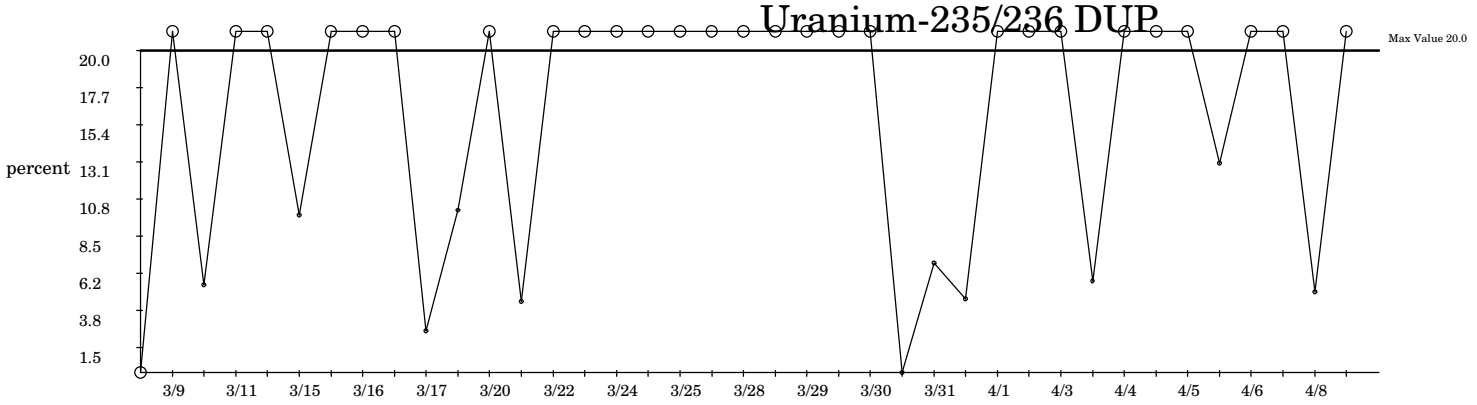

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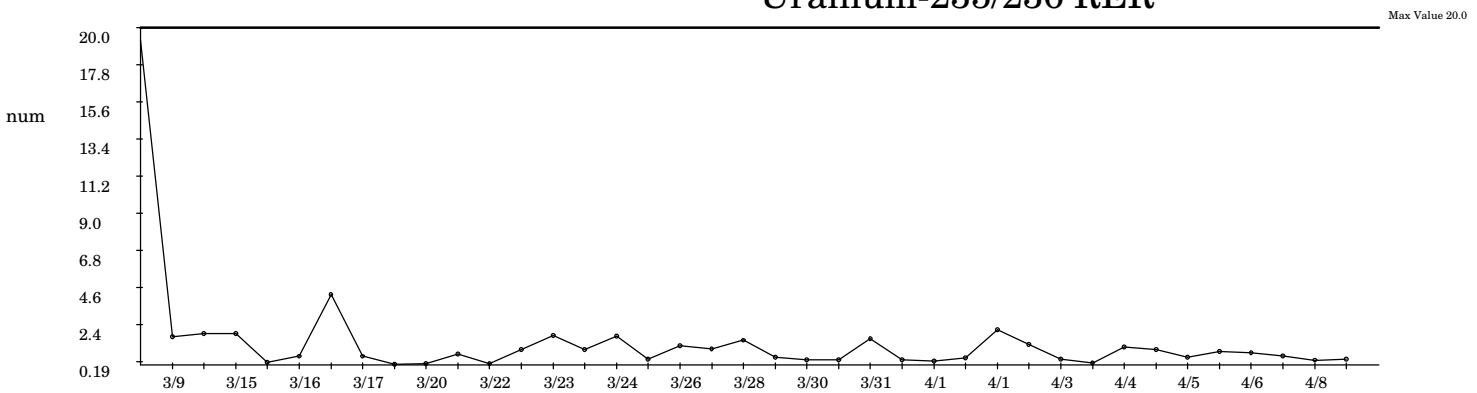
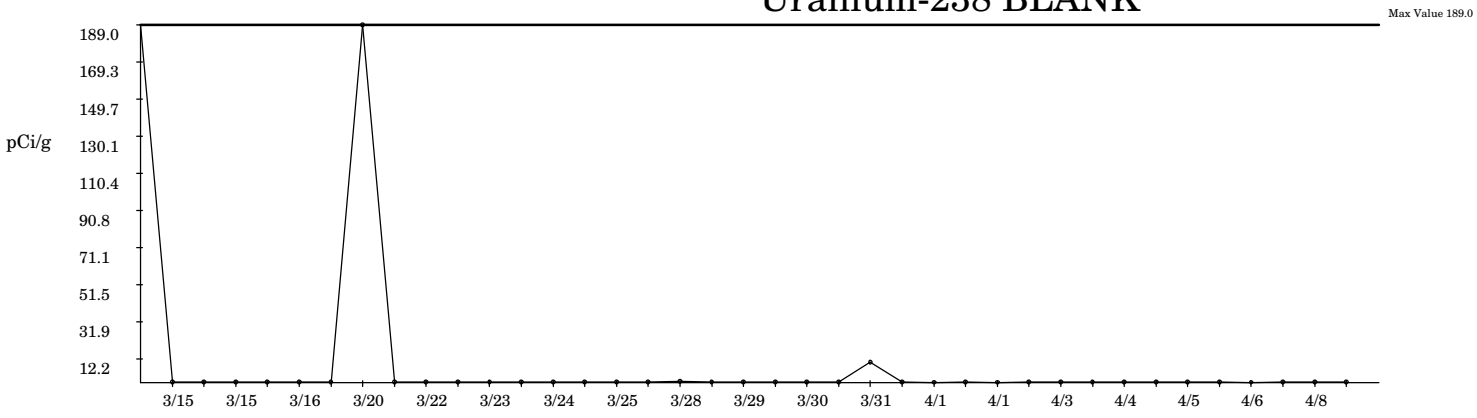


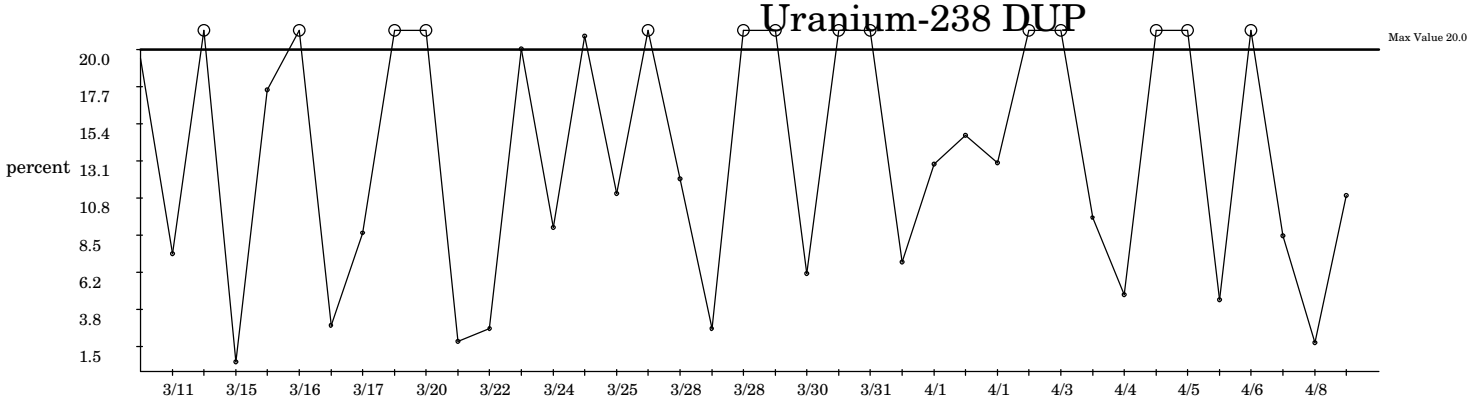
○ Denotes Outlier

SPC Graph for Alpha SpecUranium in Solids 4/10/2006

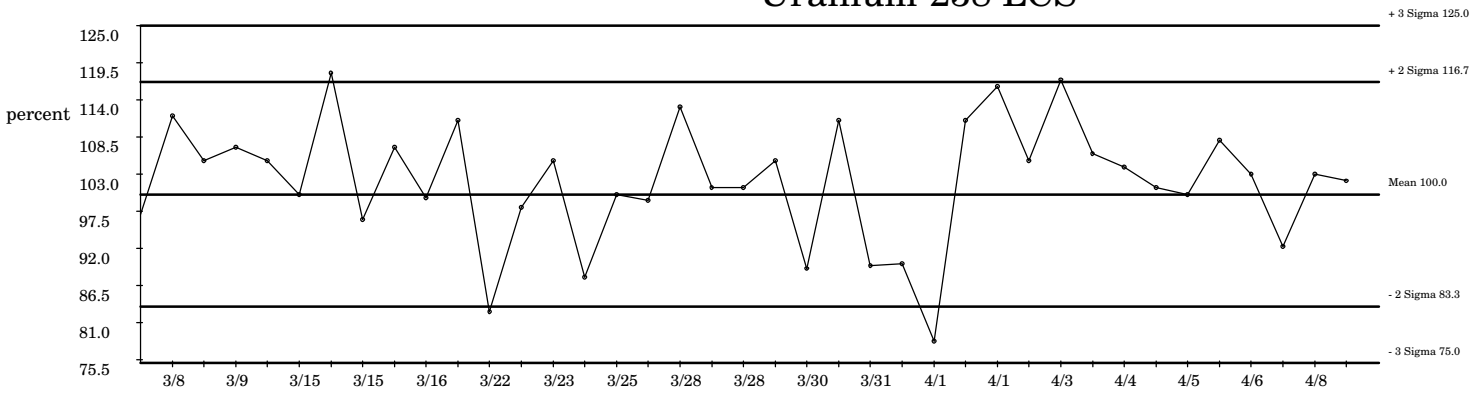
Uranium-238 BLANK



Uranium-238 DUP



Uranium-238 LCS



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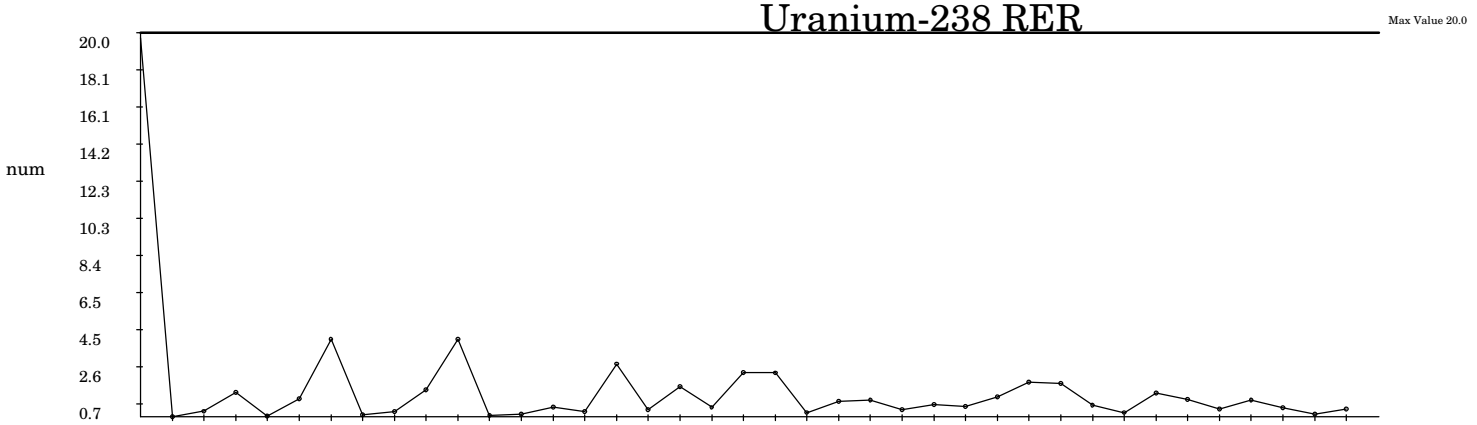
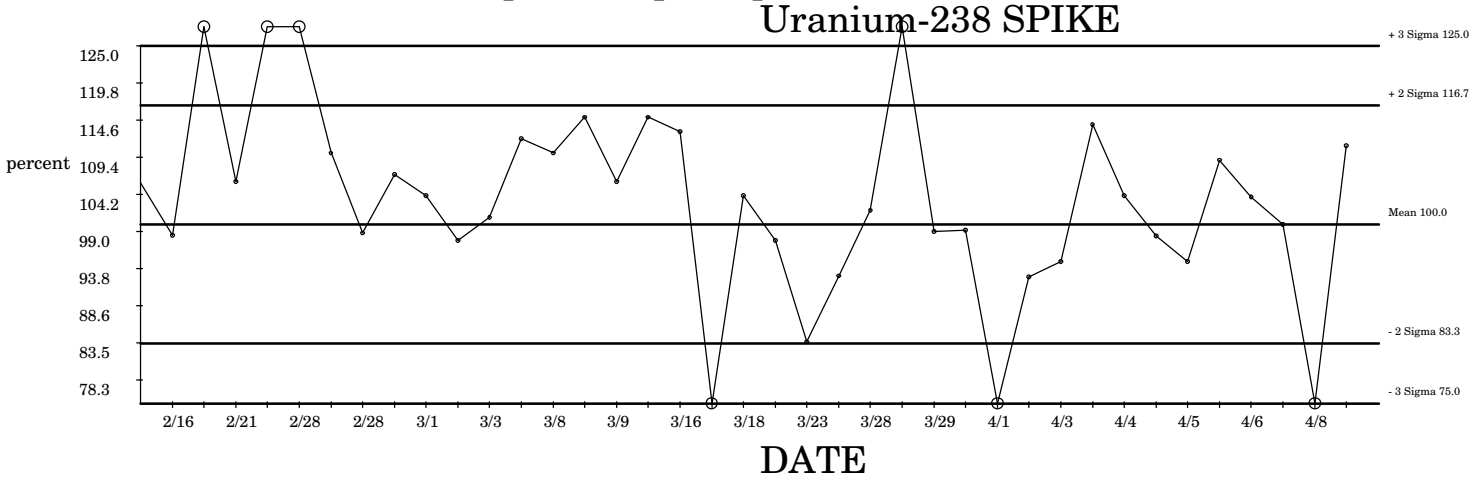


○ Denotes Outlier

SPC Graph for Alpha SpecUranium in Solids 4/10/2006
Uranium-238 SPIKE



○ Denotes Outlier

Data used for Alpha SpecUranium in Solids 11-APR-2006

Uranium-233/234 BLANK: Limits LCL = -172.1 UCL = 191.9

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
510234	1201047741	11-MAR-2006 14:29	DUSE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
509833	1201046785	15-MAR-2006 09:16	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
511711	1201051087	15-MAR-2006 09:16	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
510648	1201048635	15-MAR-2006 12:44	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
511205	1201049867	15-MAR-2006 16:54	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
510653	1201048649	16-MAR-2006 14:20	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
511197	1201049839	17-MAR-2006 13:41	DUSE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
512186	1201052164	20-MAR-2006 16:57	DONE	379	6.1	pCi/g	9.86	-170	-110	131	192	60.7
511556	1201050731	20-MAR-2006 20:55	DUSE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
513065	1201054107	22-MAR-2006 14:23	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
512000	1201051707	22-MAR-2006 19:22	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
513417	1201054860	23-MAR-2006 23:50	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
513967	1201055907	24-MAR-2006 17:20	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
511995	1201051696	24-MAR-2006 17:20	DUSE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
511573	1201050778	24-MAR-2006 19:41	DUSE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
511656	1201050971	25-MAR-2006 10:35	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
513419	1201054868	26-MAR-2006 07:39	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
513434	1201054911	28-MAR-2006 11:41	DONE	1	-0.15	pCi/g	9.86	-170	-110	131	192	60.7
506038	1201037885	28-MAR-2006 16:43	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
515154	1201058499	29-MAR-2006 08:48	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
514145	1201056277	29-MAR-2006 22:27	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
515145	1201058488	30-MAR-2006 14:53	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
515262	1201058713	31-MAR-2006 00:27	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
512056	1201051825	31-MAR-2006 13:48	DONE	2	-0.13	pCi/g	9.86	-170	-110	131	192	60.7
512024	1201051755	31-MAR-2006 15:55	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
514172	1201056341	01-APR-2006 09:22	DONE	1	-0.15	pCi/g	9.86	-170	-110	131	192	60.7
512045	1201051809	01-APR-2006 13:50	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
515259	1201058705	01-APR-2006 14:24	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
515558	1201059454	03-APR-2006 06:56	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
515551	1201059426	03-APR-2006 06:56	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
516219	1201060904	04-APR-2006 07:47	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
512063	1201051849	04-APR-2006 10:18	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
515564	1201059470	04-APR-2006 16:37	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
512069	1201051877	05-APR-2006 09:52	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
517591	1201063933	05-APR-2006 21:53	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
517143	1201062895	06-APR-2006 08:11	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
516346	1201061153	06-APR-2006 13:23	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
518034	1201064928	08-APR-2006 15:43	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7
517155	1201062931	08-APR-2006 15:43	DONE	0	-0.16	pCi/g	9.86	-170	-110	131	192	60.7

Uranium-233/234 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
508590	1201044014	09-MAR-2006 18:21	DONE	3	-0.69	percent	26.3	0	-42	94.1	20.0	33.9
510234	1201047742	11-MAR-2006 14:29	DUSE	5	-0.64	percent	26.3	0	-42	94.1	20.0	33.9
511711	1201051088	15-MAR-2006 09:16	DONE	14	-0.35	percent	26.3	0	-42	94.1	20.0	33.9
511205	1201049868	15-MAR-2006 16:54	DONE	3	-0.7	percent	26.3	0	-42	94.1	20.0	33.9

510648	1201048636	16-MAR-2006 09:25	DONE	9	-0.5	percent	26.3	0	-42	94.1	20.0	33.9
509833	1201046786	16-MAR-2006 10:10	DONE	55	0.84	percent	26.3	0	-42	94.1	20.0	33.9
510653	1201048650	17-MAR-2006 13:41	DONE	5	-0.62	percent	26.3	0	-42	94.1	20.0	33.9
511197	1201049840	17-MAR-2006 15:33	DUSE	18	-0.26	percent	26.3	0	-42	94.1	20.0	33.9
512186	1201052165	20-MAR-2006 16:57	DONE	34	0.22	percent	26.3	0	-42	94.1	20.0	33.9
511556	1201050732	20-MAR-2006 20:55	DUSE	121	2.8	percent	26.3	0	-42	94.1	20.0	33.9
513065	1201054108	22-MAR-2006 14:23	DONE	5	-0.63	percent	26.3	0	-42	94.1	20.0	33.9
512000	1201051708	22-MAR-2006 19:22	DONE	40	0.42	percent	26.3	0	-42	94.1	20.0	33.9
513417	1201054861	23-MAR-2006 23:50	DONE	41	0.43	percent	26.3	0	-42	94.1	20.0	33.9
513967	1201055908	24-MAR-2006 17:20	DONE	8	-0.55	percent	26.3	0	-42	94.1	20.0	33.9
511995	1201051697	24-MAR-2006 17:20	DUSE	26	-0.01	percent	26.3	0	-42	94.1	20.0	33.9
511656	1201050972	25-MAR-2006 10:35	DONE	5	-0.62	percent	26.3	0	-42	94.1	20.0	33.9
513419	1201054869	26-MAR-2006 07:39	DONE	44	0.53	percent	26.3	0	-42	94.1	20.0	33.9
513434	1201054912	28-MAR-2006 11:41	DONE	7	-0.57	percent	26.3	0	-42	94.1	20.0	33.9
506038	1201037886	28-MAR-2006 16:43	DONE	8	-0.53	percent	26.3	0	-42	94.1	20.0	33.9
515154	1201058500	28-MAR-2006 22:08	DONE	15	-0.34	percent	26.3	0	-42	94.1	20.0	33.9
514145	1201056278	29-MAR-2006 22:27	DONE	9	-0.52	percent	26.3	0	-42	94.1	20.0	33.9
512024	1201051756	30-MAR-2006 14:07	DONE	6	-0.61	percent	26.3	0	-42	94.1	20.0	33.9
515145	1201058489	30-MAR-2006 14:53	DONE	13	-0.39	percent	26.3	0	-42	94.1	20.0	33.9
515262	1201058714	31-MAR-2006 00:27	DONE	30	0.1	percent	26.3	0	-42	94.1	20.0	33.9
512056	1201051826	31-MAR-2006 13:48	DONE	17	-0.29	percent	26.3	0	-42	94.1	20.0	33.9
514172	1201056342	01-APR-2006 09:22	DONE	5	-0.63	percent	26.3	0	-42	94.1	20.0	33.9
512045	1201051810	01-APR-2006 13:50	DONE	3	-0.68	percent	26.3	0	-42	94.1	20.0	33.9
515259	1201058706	01-APR-2006 14:24	DONE	5	-0.63	percent	26.3	0	-42	94.1	20.0	33.9
515558	1201059455	03-APR-2006 06:56	DONE	78	1.5	percent	26.3	0	-42	94.1	20.0	33.9
515551	1201059427	03-APR-2006 06:56	DONE	131	3.1	percent	26.3	0	-42	94.1	20.0	33.9
516219	1201060905	04-APR-2006 07:47	DONE	10	-0.47	percent	26.3	0	-42	94.1	20.0	33.9
512063	1201051850	04-APR-2006 10:18	DONE	13	-0.4	percent	26.3	0	-42	94.1	20.0	33.9
512069	1201051878	05-APR-2006 09:52	DONE	6	-0.6	percent	26.3	0	-42	94.1	20.0	33.9
515564	1201059471	05-APR-2006 15:35	DONE	27	0.01	percent	26.3	0	-42	94.1	20.0	33.9
517591	1201063934	05-APR-2006 21:53	DONE	3	-0.7	percent	26.3	0	-42	94.1	20.0	33.9
517143	1201062896	06-APR-2006 08:11	DONE	123	2.9	percent	26.3	0	-42	94.1	20.0	33.9
516346	1201061154	06-APR-2006 13:23	DONE	25	-0.04	percent	26.3	0	-42	94.1	20.0	33.9
518034	1201064929	08-APR-2006 15:43	DONE	0	-0.78	percent	26.3	0	-42	94.1	20.0	33.9
517155	1201062932	08-APR-2006 15:43	DONE	57	0.91	percent	26.3	0	-42	94.1	20.0	33.9

Uranium-233/234 RER: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
508588	1201044006	09-MAR-2006 15:47	DONE	0.22	-0.65	num	0.91	0	-1.2	3.03	20.0	1.06
508590	1201044014	09-MAR-2006 18:21	DONE	0.09	-0.77	num	0.91	0	-1.2	3.03	20.0	1.06
510234	1201047742	11-MAR-2006 14:29	DUSE	0.19	-0.68	num	0.91	0	-1.2	3.03	20.0	1.06
511711	1201051088	15-MAR-2006 09:16	DONE	0.84	-0.07	num	0.91	0	-1.2	3.03	20.0	1.06
511205	1201049868	15-MAR-2006 16:54	DONE	0.1	-0.76	num	0.91	0	-1.2	3.03	20.0	1.06
510648	1201048636	16-MAR-2006 09:25	DONE	0.52	-0.36	num	0.91	0	-1.2	3.03	20.0	1.06
509833	1201046786	16-MAR-2006 10:10	DONE	4.43	3.3	num	0.91	0	-1.2	3.03	20.0	1.06
510653	1201048650	17-MAR-2006 13:41	DONE	0.19	-0.68	num	0.91	0	-1.2	3.03	20.0	1.06
511197	1201049840	17-MAR-2006 15:33	DUSE	0.57	-0.32	num	0.91	0	-1.2	3.03	20.0	1.06
512186	1201052165	20-MAR-2006 16:57	DONE	0.6	-0.29	num	0.91	0	-1.2	3.03	20.0	1.06
511556	1201050732	20-MAR-2006 20:55	DUSE	4.02	2.9	num	0.91	0	-1.2	3.03	20.0	1.06
513065	1201054108	22-MAR-2006 14:23	DONE	0.22	-0.65	num	0.91	0	-1.2	3.03	20.0	1.06

512000	1201051708	22-MAR-2006 19:22	DONE	2.2	1.2	num	0.91	0	-1.2	3.03	20.0	1.06
513417	1201054861	23-MAR-2006 23:50	DONE	0.99	0.08	num	0.91	0	-1.2	3.03	20.0	1.06
513967	1201055908	24-MAR-2006 17:20	DONE	0.22	-0.65	num	0.91	0	-1.2	3.03	20.0	1.06
511995	1201051697	24-MAR-2006 17:20	DUSE	3.58	2.5	num	0.91	0	-1.2	3.03	20.0	1.06
511656	1201050972	25-MAR-2006 10:35	DONE	0.18	-0.69	num	0.91	0	-1.2	3.03	20.0	1.06
513419	1201054869	26-MAR-2006 07:39	DONE	0.99	0.08	num	0.91	0	-1.2	3.03	20.0	1.06
513434	1201054912	28-MAR-2006 11:41	DONE	0.28	-0.59	num	0.91	0	-1.2	3.03	20.0	1.06
515154	1201058500	28-MAR-2006 22:08	DONE	1.3	0.37	num	0.91	0	-1.2	3.03	20.0	1.06
514145	1201056278	29-MAR-2006 22:27	DONE	0.46	-0.43	num	0.91	0	-1.2	3.03	20.0	1.06
512024	1201051756	30-MAR-2006 14:07	DONE	0.19	-0.68	num	0.91	0	-1.2	3.03	20.0	1.06
515145	1201058489	30-MAR-2006 14:53	DONE	0.42	-0.47	num	0.91	0	-1.2	3.03	20.0	1.06
515262	1201058714	31-MAR-2006 00:27	DONE	0.73	-0.17	num	0.91	0	-1.2	3.03	20.0	1.06
512056	1201051826	31-MAR-2006 13:48	DONE	0.89	-0.02	num	0.91	0	-1.2	3.03	20.0	1.06
514172	1201056342	01-APR-2006 09:22	DONE	0.26	-0.61	num	0.91	0	-1.2	3.03	20.0	1.06
512045	1201051810	01-APR-2006 13:50	DONE	0.12	-0.75	num	0.91	0	-1.2	3.03	20.0	1.06
515259	1201058706	01-APR-2006 14:24	DONE	0.39	-0.49	num	0.91	0	-1.2	3.03	20.0	1.06
515558	1201059455	03-APR-2006 06:56	DONE	1.76	0.8	num	0.91	0	-1.2	3.03	20.0	1.06
515551	1201059427	03-APR-2006 06:56	DONE	0.65	-0.25	num	0.91	0	-1.2	3.03	20.0	1.06
516219	1201060905	04-APR-2006 07:47	DONE	0.66	-0.23	num	0.91	0	-1.2	3.03	20.0	1.06
512063	1201051850	04-APR-2006 10:18	DONE	0.86	-0.04	num	0.91	0	-1.2	3.03	20.0	1.06
512069	1201051878	05-APR-2006 09:52	DONE	0.32	-0.55	num	0.91	0	-1.2	3.03	20.0	1.06
515564	1201059471	05-APR-2006 15:35	DONE	0.91	00	num	0.91	0	-1.2	3.03	20.0	1.06
517591	1201063934	05-APR-2006 21:53	DONE	0.25	-0.62	num	0.91	0	-1.2	3.03	20.0	1.06
517143	1201062896	06-APR-2006 08:11	DONE	1.31	0.38	num	0.91	0	-1.2	3.03	20.0	1.06
516346	1201061154	06-APR-2006 13:23	DONE	1.51	0.57	num	0.91	0	-1.2	3.03	20.0	1.06
518034	1201064929	08-APR-2006 15:43	DONE	0	-0.86	num	0.91	0	-1.2	3.03	20.0	1.06
517155	1201062932	08-APR-2006 15:43	DONE	2.02	1	num	0.91	0	-1.2	3.03	20.0	1.06

Uranium-235/236 BLANK: Limits LCL = -186.6 UCL = 207.4

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
510234	1201047741	11-MAR-2006 14:29	DUSE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
509833	1201046785	15-MAR-2006 09:16	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
511711	1201051087	15-MAR-2006 09:16	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
510648	1201048635	15-MAR-2006 12:44	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
511205	1201049867	15-MAR-2006 16:54	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
510653	1201048649	16-MAR-2006 14:20	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
511197	1201049839	17-MAR-2006 13:41	DUSE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
512186	1201052164	20-MAR-2006 16:57	DONE	410	6.1	pCi/g	10.4	-190	-120	142	207	65.7
511556	1201050731	20-MAR-2006 20:55	DUSE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
513065	1201054107	22-MAR-2006 14:23	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
512000	1201051707	22-MAR-2006 19:22	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
513417	1201054860	23-MAR-2006 23:50	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
513967	1201055907	24-MAR-2006 17:20	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
511995	1201051696	24-MAR-2006 17:20	DUSE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
511573	1201050778	24-MAR-2006 19:41	DUSE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
511656	1201050971	25-MAR-2006 10:35	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
513419	1201054868	26-MAR-2006 07:39	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
513434	1201054911	28-MAR-2006 11:41	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
506038	1201037885	28-MAR-2006 16:43	DUSE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
515154	1201058499	29-MAR-2006 08:48	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7

514145	1201056277	29-MAR-2006 22:27	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
515145	1201058488	30-MAR-2006 14:53	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
515262	1201058713	31-MAR-2006 00:27	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
512056	1201051825	31-MAR-2006 13:48	DONE	-4	-0.22	pCi/g	10.4	-190	-120	142	207	65.7
512024	1201051755	31-MAR-2006 15:55	DUSE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
514172	1201056341	01-APR-2006 09:22	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
512045	1201051809	01-APR-2006 13:50	DUSE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
515259	1201058705	01-APR-2006 14:24	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
515558	1201059454	03-APR-2006 06:56	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
515551	1201059426	03-APR-2006 06:56	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
516219	1201060904	04-APR-2006 07:47	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
512063	1201051849	04-APR-2006 10:18	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
515564	1201059470	04-APR-2006 16:37	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
512069	1201051877	05-APR-2006 09:52	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
517591	1201063933	05-APR-2006 21:53	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
517143	1201062895	06-APR-2006 08:11	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
516346	1201061153	06-APR-2006 13:23	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
518034	1201064928	08-APR-2006 15:43	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7
517155	1201062931	08-APR-2006 15:43	DONE	0	-0.16	pCi/g	10.4	-190	-120	142	207	65.7

Uranium-235/236 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
509121	1201045269	09-MAR-2006 15:47	DONE	63	-0.04	percent	67.2	0	-100	239	20.0	86
508588	1201044006	09-MAR-2006 15:47	DONE	94	0.31	percent	67.2	0	-100	239	20.0	86
508590	1201044014	09-MAR-2006 18:21	DONE	5	-0.72	percent	67.2	0	-100	239	20.0	86
510234	1201047742	11-MAR-2006 14:29	DUSE	94	0.31	percent	67.2	0	-100	239	20.0	86
511711	1201051088	15-MAR-2006 09:16	DONE	201	1.6	percent	67.2	0	-100	239	20.0	86
511205	1201049868	15-MAR-2006 16:54	DONE	10	-0.67	percent	67.2	0	-100	239	20.0	86
510648	1201048636	16-MAR-2006 09:25	DONE	33	-0.4	percent	67.2	0	-100	239	20.0	86
509833	1201046786	16-MAR-2006 10:10	DONE	96	0.33	percent	67.2	0	-100	239	20.0	86
510653	1201048650	17-MAR-2006 13:41	DONE	38	-0.34	percent	67.2	0	-100	239	20.0	86
511197	1201049840	17-MAR-2006 15:33	DUSE	3	-0.75	percent	67.2	0	-100	239	20.0	86
512186	1201052165	20-MAR-2006 16:57	DONE	10	-0.66	percent	67.2	0	-100	239	20.0	86
511556	1201050732	20-MAR-2006 20:55	DUSE	60	-0.08	percent	67.2	0	-100	239	20.0	86
513065	1201054108	22-MAR-2006 14:23	DONE	4	-0.73	percent	67.2	0	-100	239	20.0	86
512000	1201051708	22-MAR-2006 19:22	DONE	74	0.08	percent	67.2	0	-100	239	20.0	86
513417	1201054861	23-MAR-2006 23:50	DONE	228	1.9	percent	67.2	0	-100	239	20.0	86
513967	1201055908	24-MAR-2006 17:20	DONE	104	0.43	percent	67.2	0	-100	239	20.0	86
511995	1201051697	24-MAR-2006 17:20	DUSE	28	-0.46	percent	67.2	0	-100	239	20.0	86
511656	1201050972	25-MAR-2006 10:35	DONE	38	-0.33	percent	67.2	0	-100	239	20.0	86
513419	1201054869	26-MAR-2006 07:39	DONE	167	1.2	percent	67.2	0	-100	239	20.0	86
513434	1201054912	28-MAR-2006 11:41	DONE	25	-0.49	percent	67.2	0	-100	239	20.0	86
515154	1201058500	28-MAR-2006 22:08	DONE	54	-0.15	percent	67.2	0	-100	239	20.0	86
514145	1201056278	29-MAR-2006 22:27	DONE	70	0.03	percent	67.2	0	-100	239	20.0	86
512024	1201051756	30-MAR-2006 14:07	DUSE	25	-0.49	percent	67.2	0	-100	239	20.0	86
515145	1201058489	30-MAR-2006 14:53	DONE	30	-0.43	percent	67.2	0	-100	239	20.0	86
515262	1201058714	31-MAR-2006 00:27	DONE	0	-0.78	percent	67.2	0	-100	239	20.0	86
512056	1201051826	31-MAR-2006 13:48	DONE	7	-0.7	percent	67.2	0	-100	239	20.0	86
514172	1201056342	01-APR-2006 09:22	DONE	5	-0.73	percent	67.2	0	-100	239	20.0	86
512045	1201051810	01-APR-2006 13:50	DUSE	43	-0.28	percent	67.2	0	-100	239	20.0	86

515259	1201058706	01-APR-2006 14:24	DONE	70	0.03	percent	67.2	0	-100	239	20.0	86
515558	1201059455	03-APR-2006 06:56	DONE	324	3	percent	67.2	0	-100	239	20.0	86
516219	1201060905	04-APR-2006 07:47	DONE	6	-0.71	percent	67.2	0	-100	239	20.0	86
512063	1201051850	04-APR-2006 10:18	DONE	40	-0.31	percent	67.2	0	-100	239	20.0	86
512069	1201051878	05-APR-2006 09:52	DONE	75	0.09	percent	67.2	0	-100	239	20.0	86
515564	1201059471	05-APR-2006 15:35	DONE	37	-0.35	percent	67.2	0	-100	239	20.0	86
517591	1201063934	05-APR-2006 21:53	DONE	13	-0.63	percent	67.2	0	-100	239	20.0	86
517143	1201062896	06-APR-2006 08:11	DONE	386	3.7	percent	67.2	0	-100	239	20.0	86
516346	1201061154	06-APR-2006 13:23	DONE	25	-0.49	percent	67.2	0	-100	239	20.0	86
518034	1201064929	08-APR-2006 15:43	DONE	5	-0.72	percent	67.2	0	-100	239	20.0	86
517155	1201062932	08-APR-2006 15:43	DONE	28	-0.45	percent	67.2	0	-100	239	20.0	86

Uranium-235/236 RER: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
508588	1201044006	09-MAR-2006 15:47	DONE	0.74	-0.16	num	0.87	0	-0.721	2.47	20.0	0.8
508590	1201044014	09-MAR-2006 18:21	DONE	1.67	1	num	0.87	0	-0.721	2.47	20.0	0.8
510234	1201047742	11-MAR-2006 14:29	DUSE	1.86	1.2	num	0.87	0	-0.721	2.47	20.0	0.8
511711	1201051088	15-MAR-2006 09:16	DONE	1.87	1.2	num	0.87	0	-0.721	2.47	20.0	0.8
511205	1201049868	15-MAR-2006 16:54	DONE	0.17	-0.89	num	0.87	0	-0.721	2.47	20.0	0.8
510648	1201048636	16-MAR-2006 09:25	DONE	0.51	-0.45	num	0.87	0	-0.721	2.47	20.0	0.8
509833	1201046786	16-MAR-2006 10:10	DONE	4.18	4.1	num	0.87	0	-0.721	2.47	20.0	0.8
510653	1201048650	17-MAR-2006 13:41	DONE	0.52	-0.45	num	0.87	0	-0.721	2.47	20.0	0.8
511197	1201049840	17-MAR-2006 15:33	DUSE	0.03	-1	num	0.87	0	-0.721	2.47	20.0	0.8
512186	1201052165	20-MAR-2006 16:57	DONE	0.06	-1	num	0.87	0	-0.721	2.47	20.0	0.8
511556	1201050732	20-MAR-2006 20:55	DUSE	0.65	-0.28	num	0.87	0	-0.721	2.47	20.0	0.8
513065	1201054108	22-MAR-2006 14:23	DONE	0.08	-01	num	0.87	0	-0.721	2.47	20.0	0.8
512000	1201051708	22-MAR-2006 19:22	DONE	0.92	0.06	num	0.87	0	-0.721	2.47	20.0	0.8
513417	1201054861	23-MAR-2006 23:50	DONE	1.75	1.1	num	0.87	0	-0.721	2.47	20.0	0.8
513967	1201055908	24-MAR-2006 17:20	DONE	0.92	0.06	num	0.87	0	-0.721	2.47	20.0	0.8
511995	1201051697	24-MAR-2006 17:20	DUSE	1.72	1.1	num	0.87	0	-0.721	2.47	20.0	0.8
511656	1201050972	25-MAR-2006 10:35	DONE	0.36	-0.65	num	0.87	0	-0.721	2.47	20.0	0.8
513419	1201054869	26-MAR-2006 07:39	DONE	1.16	0.36	num	0.87	0	-0.721	2.47	20.0	0.8
513434	1201054912	28-MAR-2006 11:41	DONE	0.96	0.11	num	0.87	0	-0.721	2.47	20.0	0.8
515154	1201058500	28-MAR-2006 22:08	DONE	1.47	0.74	num	0.87	0	-0.721	2.47	20.0	0.8
514145	1201056278	29-MAR-2006 22:27	DONE	0.45	-0.53	num	0.87	0	-0.721	2.47	20.0	0.8
512024	1201051756	30-MAR-2006 14:07	DUSE	0.32	-0.7	num	0.87	0	-0.721	2.47	20.0	0.8
515145	1201058489	30-MAR-2006 14:53	DONE	0.3	-0.71	num	0.87	0	-0.721	2.47	20.0	0.8
515262	1201058714	31-MAR-2006 00:27	DONE	1.55	0.84	num	0.87	0	-0.721	2.47	20.0	0.8
512056	1201051826	31-MAR-2006 13:48	DONE	0.31	-0.71	num	0.87	0	-0.721	2.47	20.0	0.8
514172	1201056342	01-APR-2006 09:22	DONE	0.22	-0.82	num	0.87	0	-0.721	2.47	20.0	0.8
512045	1201051810	01-APR-2006 13:50	DUSE	0.43	-0.56	num	0.87	0	-0.721	2.47	20.0	0.8
515259	1201058706	01-APR-2006 14:24	DONE	2.08	1.5	num	0.87	0	-0.721	2.47	20.0	0.8
515558	1201059455	03-APR-2006 06:56	DONE	1.21	0.43	num	0.87	0	-0.721	2.47	20.0	0.8
515551	1201059427	03-APR-2006 06:56	DONE	0.35	-0.65	num	0.87	0	-0.721	2.47	20.0	0.8
516219	1201060905	04-APR-2006 07:47	DONE	0.12	-0.94	num	0.87	0	-0.721	2.47	20.0	0.8
512063	1201051850	04-APR-2006 10:18	DONE	1.06	0.23	num	0.87	0	-0.721	2.47	20.0	0.8
512069	1201051878	05-APR-2006 09:52	DONE	0.92	0.06	num	0.87	0	-0.721	2.47	20.0	0.8
515564	1201059471	05-APR-2006 15:35	DONE	0.46	-0.52	num	0.87	0	-0.721	2.47	20.0	0.8
517591	1201063934	05-APR-2006 21:53	DONE	0.79	-0.1	num	0.87	0	-0.721	2.47	20.0	0.8
517143	1201062896	06-APR-2006 08:11	DONE	0.74	-0.17	num	0.87	0	-0.721	2.47	20.0	0.8

516346	1201061154	06-APR-2006 13:23	DONE	0.52	-0.44	num	0.87	0	-0.721	2.47	20.0	0.8
518034	1201064929	08-APR-2006 15:43	DONE	0.28	-0.74	num	0.87	0	-0.721	2.47	20.0	0.8
517155	1201062932	08-APR-2006 15:43	DONE	0.34	-0.67	num	0.87	0	-0.721	2.47	20.0	0.8

Uranium-238 BLANK: Limits LCL = -85.7 UCL = 95.9

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
510234	1201047741	11-MAR-2006 14:29	DUSE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
509833	1201046785	15-MAR-2006 09:16	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
511711	1201051087	15-MAR-2006 09:16	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
510648	1201048635	15-MAR-2006 12:44	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
511205	1201049867	15-MAR-2006 16:54	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
510653	1201048649	16-MAR-2006 14:20	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
511197	1201049839	17-MAR-2006 13:41	DUSE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
512186	1201052164	20-MAR-2006 16:57	DONE	189	6.1	pCi/g	5.13	-86	-55	65.7	95.9	30.3
511556	1201050731	20-MAR-2006 20:55	DUSE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
513065	1201054107	22-MAR-2006 14:23	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
512000	1201051707	22-MAR-2006 19:22	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
513417	1201054860	23-MAR-2006 23:50	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
513967	1201055907	24-MAR-2006 17:20	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
511995	1201051696	24-MAR-2006 17:20	DUSE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
511573	1201050778	24-MAR-2006 19:41	DUSE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
511656	1201050971	25-MAR-2006 10:35	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
513419	1201054868	26-MAR-2006 07:39	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
513434	1201054911	28-MAR-2006 11:41	DONE	0	-0.16	pCi/g	5.13	-86	-55	65.7	95.9	30.3
506038	1201037885	28-MAR-2006 16:43	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
515154	1201058499	29-MAR-2006 08:48	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
514145	1201056277	29-MAR-2006 22:27	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
515145	1201058488	30-MAR-2006 14:53	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
515262	1201058713	31-MAR-2006 00:27	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
512056	1201051825	31-MAR-2006 13:48	DONE	11	0.18	pCi/g	5.13	-86	-55	65.7	95.9	30.3
512024	1201051755	31-MAR-2006 15:55	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
514172	1201056341	01-APR-2006 09:22	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
512045	1201051809	01-APR-2006 13:50	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
515259	1201058705	01-APR-2006 14:24	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
515558	1201059454	03-APR-2006 06:56	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
515551	1201059426	03-APR-2006 06:56	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
516219	1201060904	04-APR-2006 07:47	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
512063	1201051849	04-APR-2006 10:18	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
515564	1201059470	04-APR-2006 16:37	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
512069	1201051877	05-APR-2006 09:52	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
517591	1201063933	05-APR-2006 21:53	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
517143	1201062895	06-APR-2006 08:11	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
516346	1201061153	06-APR-2006 13:23	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
518034	1201064928	08-APR-2006 15:43	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3
517155	1201062931	08-APR-2006 15:43	DONE	0	-0.17	pCi/g	5.13	-86	-55	65.7	95.9	30.3

Uranium-238 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
508590	1201044014	09-MAR-2006 18:21	DONE	1	-0.5	percent	36	0	-100	176	20.0	70.2
510234	1201047742	11-MAR-2006 14:29	DUSE	7	-0.41	percent	36	0	-100	176	20.0	70.2

511711	1201051088	15-MAR-2006 09:16	DONE	21	-0.21	percent	36	0	-100	176	20.0	70.2
511205	1201049868	15-MAR-2006 16:54	DONE	1	-0.5	percent	36	0	-100	176	20.0	70.2
510648	1201048636	16-MAR-2006 09:25	DONE	18	-0.26	percent	36	0	-100	176	20.0	70.2
509833	1201046786	16-MAR-2006 10:10	DONE	54	0.26	percent	36	0	-100	176	20.0	70.2
510653	1201048650	17-MAR-2006 13:41	DONE	3	-0.47	percent	36	0	-100	176	20.0	70.2
511197	1201049840	17-MAR-2006 15:33	DUSE	9	-0.39	percent	36	0	-100	176	20.0	70.2
512186	1201052165	20-MAR-2006 16:57	DONE	200	2.3	percent	36	0	-100	176	20.0	70.2
511556	1201050732	20-MAR-2006 20:55	DUSE	119	1.2	percent	36	0	-100	176	20.0	70.2
513065	1201054108	22-MAR-2006 14:23	DONE	2	-0.49	percent	36	0	-100	176	20.0	70.2
512000	1201051708	22-MAR-2006 19:22	DONE	3	-0.47	percent	36	0	-100	176	20.0	70.2
513417	1201054861	23-MAR-2006 23:50	DONE	20	-0.23	percent	36	0	-100	176	20.0	70.2
513967	1201055908	24-MAR-2006 17:20	DONE	9	-0.39	percent	36	0	-100	176	20.0	70.2
511995	1201051697	24-MAR-2006 17:20	DUSE	21	-0.22	percent	36	0	-100	176	20.0	70.2
511656	1201050972	25-MAR-2006 10:35	DONE	11	-0.35	percent	36	0	-100	176	20.0	70.2
513419	1201054869	26-MAR-2006 07:39	DONE	61	0.36	percent	36	0	-100	176	20.0	70.2
513434	1201054912	28-MAR-2006 11:41	DONE	12	-0.34	percent	36	0	-100	176	20.0	70.2
506038	1201037886	28-MAR-2006 16:43	DONE	3	-0.47	percent	36	0	-100	176	20.0	70.2
515154	1201058500	28-MAR-2006 22:08	DONE	29	-0.09	percent	36	0	-100	176	20.0	70.2
514145	1201056278	29-MAR-2006 22:27	DONE	47	0.15	percent	36	0	-100	176	20.0	70.2
512024	1201051756	30-MAR-2006 14:07	DONE	6	-0.43	percent	36	0	-100	176	20.0	70.2
515145	1201058489	30-MAR-2006 14:53	DONE	25	-0.16	percent	36	0	-100	176	20.0	70.2
515262	1201058714	31-MAR-2006 00:27	DONE	38	0.03	percent	36	0	-100	176	20.0	70.2
512056	1201051826	31-MAR-2006 13:48	DONE	7	-0.42	percent	36	0	-100	176	20.0	70.2
514172	1201056342	01-APR-2006 09:22	DONE	13	-0.33	percent	36	0	-100	176	20.0	70.2
512045	1201051810	01-APR-2006 13:50	DONE	15	-0.3	percent	36	0	-100	176	20.0	70.2
515259	1201058706	01-APR-2006 14:24	DONE	13	-0.33	percent	36	0	-100	176	20.0	70.2
515558	1201059455	03-APR-2006 06:56	DONE	72	0.52	percent	36	0	-100	176	20.0	70.2
515551	1201059427	03-APR-2006 06:56	DONE	395	5.1	percent	36	0	-100	176	20.0	70.2
516219	1201060905	04-APR-2006 07:47	DONE	10	-0.38	percent	36	0	-100	176	20.0	70.2
512063	1201051850	04-APR-2006 10:18	DONE	5	-0.44	percent	36	0	-100	176	20.0	70.2
512069	1201051878	05-APR-2006 09:52	DONE	26	-0.15	percent	36	0	-100	176	20.0	70.2
515564	1201059471	05-APR-2006 15:35	DONE	26	-0.15	percent	36	0	-100	176	20.0	70.2
517591	1201063934	05-APR-2006 21:53	DONE	4	-0.45	percent	36	0	-100	176	20.0	70.2
517143	1201062896	06-APR-2006 08:11	DONE	79	0.61	percent	36	0	-100	176	20.0	70.2
516346	1201061154	06-APR-2006 13:23	DONE	8	-0.39	percent	36	0	-100	176	20.0	70.2
518034	1201064929	08-APR-2006 15:43	DONE	2	-0.49	percent	36	0	-100	176	20.0	70.2
517155	1201062932	08-APR-2006 15:43	DONE	11	-0.36	percent	36	0	-100	176	20.0	70.2

Uranium-238 LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
509084	1201045148	08-MAR-2006 13:55	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
508638	1201044148	08-MAR-2006 17:42	DONE	112	1.4	percent	100	75.0	83.3	117	125	8.33
509121	1201045270	09-MAR-2006 15:47	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
508588	1201044008	09-MAR-2006 15:47	DONE	107	0.84	percent	100	75.0	83.3	117	125	8.33
508590	1201044016	09-MAR-2006 18:21	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
509833	1201046788	15-MAR-2006 09:16	DONE	100	0	percent	100	75.0	83.3	117	125	8.33
511711	1201051090	15-MAR-2006 09:16	DONE	118	2.2	percent	100	75.0	83.3	117	125	8.33
511205	1201049869	15-MAR-2006 16:54	DONE	96	-0.44	percent	100	75.0	83.3	117	125	8.33
510648	1201048638	16-MAR-2006 09:25	DONE	107	0.84	percent	100	75.0	83.3	117	125	8.33
510653	1201048651	16-MAR-2006 15:06	DONE	100	-0.06	percent	100	75.0	83.3	117	125	8.33

512186	1201052167	18-MAR-2006 09:47	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
513065	1201054109	22-MAR-2006 14:23	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
512000	1201051710	22-MAR-2006 19:22	DONE	98	-0.23	percent	100	75.0	83.3	117	125	8.33
513417	1201054863	23-MAR-2006 23:50	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
513967	1201055909	24-MAR-2006 17:20	DONE	88	-1	percent	100	75.0	83.3	117	125	8.33
511656	1201050973	25-MAR-2006 10:35	DONE	100	0	percent	100	75.0	83.3	117	125	8.33
513419	1201054871	26-MAR-2006 07:39	DONE	99	-0.11	percent	100	75.0	83.3	117	125	8.33
513434	1201054913	28-MAR-2006 11:41	DONE	113	1.6	percent	100	75.0	83.3	117	125	8.33
506038	1201037888	28-MAR-2006 16:43	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
515154	1201058502	28-MAR-2006 22:08	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
514145	1201056280	29-MAR-2006 22:27	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
512024	1201051757	30-MAR-2006 14:07	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
515145	1201058490	30-MAR-2006 18:03	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
515262	1201058716	31-MAR-2006 07:47	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
512056	1201051827	31-MAR-2006 13:48	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
514172	1201056344	01-APR-2006 09:22	DONE	78	-3	percent	100	75.0	83.3	117	125	8.33
515259	1201058708	01-APR-2006 09:22	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
512045	1201051811	01-APR-2006 13:50	DONE	116	1.9	percent	100	75.0	83.3	117	125	8.33
515558	1201059457	03-APR-2006 06:56	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
515551	1201059429	03-APR-2006 06:56	DONE	117	2	percent	100	75.0	83.3	117	125	8.33
516219	1201060907	04-APR-2006 07:47	DONE	106	0.72	percent	100	75.0	83.3	117	125	8.33
512063	1201051852	04-APR-2006 10:18	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
515564	1201059472	04-APR-2006 16:37	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
512069	1201051880	05-APR-2006 09:52	DONE	100	0	percent	100	75.0	83.3	117	125	8.33
517143	1201062898	06-APR-2006 08:11	DONE	108	0.96	percent	100	75.0	83.3	117	125	8.33
517591	1201063936	06-APR-2006 08:11	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
516346	1201061156	06-APR-2006 13:23	DONE	92	-0.92	percent	100	75.0	83.3	117	125	8.33
518034	1201064931	08-APR-2006 15:43	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
517155	1201062934	08-APR-2006 15:43	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33

Uranium-238 RER: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
508588	1201044006	09-MAR-2006 15:47	DONE	0.27	-0.67	num	0.94	0	-1.1	2.93	20.0	0.99
508590	1201044014	09-MAR-2006 18:21	DONE	0.02	-0.93	num	0.94	0	-1.1	2.93	20.0	0.99
510234	1201047742	11-MAR-2006 14:29	DUSE	0.29	-0.65	num	0.94	0	-1.1	2.93	20.0	0.99
511711	1201051088	15-MAR-2006 09:16	DONE	1.25	0.32	num	0.94	0	-1.1	2.93	20.0	0.99
511205	1201049868	15-MAR-2006 16:54	DONE	0.02	-0.92	num	0.94	0	-1.1	2.93	20.0	0.99
510648	1201048636	16-MAR-2006 09:25	DONE	0.94	0.01	num	0.94	0	-1.1	2.93	20.0	0.99
509833	1201046786	16-MAR-2006 10:10	DONE	4.02	3.1	num	0.94	0	-1.1	2.93	20.0	0.99
510653	1201048650	17-MAR-2006 13:41	DONE	0.11	-0.84	num	0.94	0	-1.1	2.93	20.0	0.99
511197	1201049840	17-MAR-2006 15:33	DUSE	0.28	-0.66	num	0.94	0	-1.1	2.93	20.0	0.99
512186	1201052165	20-MAR-2006 16:57	DONE	1.39	0.45	num	0.94	0	-1.1	2.93	20.0	0.99
511556	1201050732	20-MAR-2006 20:55	DUSE	4.03	3.1	num	0.94	0	-1.1	2.93	20.0	0.99
513065	1201054108	22-MAR-2006 14:23	DONE	0.08	-0.86	num	0.94	0	-1.1	2.93	20.0	0.99
512000	1201051708	22-MAR-2006 19:22	DONE	0.13	-0.81	num	0.94	0	-1.1	2.93	20.0	0.99
513417	1201054861	23-MAR-2006 23:50	DONE	0.52	-0.42	num	0.94	0	-1.1	2.93	20.0	0.99
513967	1201055908	24-MAR-2006 17:20	DONE	0.27	-0.68	num	0.94	0	-1.1	2.93	20.0	0.99
511995	1201051697	24-MAR-2006 17:20	DUSE	2.75	1.8	num	0.94	0	-1.1	2.93	20.0	0.99
511656	1201050972	25-MAR-2006 10:35	DONE	0.37	-0.57	num	0.94	0	-1.1	2.93	20.0	0.99
513419	1201054869	26-MAR-2006 07:39	DONE	1.56	0.63	num	0.94	0	-1.1	2.93	20.0	0.99

513434	1201054912	28-MAR-2006 11:41	DONE	0.49	-0.45	num	0.94	0	-1.1	2.93	20.0	0.99
515154	1201058500	28-MAR-2006 22:08	DONE	2.3	1.4	num	0.94	0	-1.1	2.93	20.0	0.99
514145	1201056278	29-MAR-2006 22:27	DONE	2.29	1.4	num	0.94	0	-1.1	2.93	20.0	0.99
512024	1201051756	30-MAR-2006 14:07	DONE	0.21	-0.73	num	0.94	0	-1.1	2.93	20.0	0.99
515145	1201058489	30-MAR-2006 14:53	DONE	0.81	-0.13	num	0.94	0	-1.1	2.93	20.0	0.99
515262	1201058714	31-MAR-2006 00:27	DONE	0.85	-0.09	num	0.94	0	-1.1	2.93	20.0	0.99
512056	1201051826	31-MAR-2006 13:48	DONE	0.37	-0.57	num	0.94	0	-1.1	2.93	20.0	0.99
514172	1201056342	01-APR-2006 09:22	DONE	0.65	-0.29	num	0.94	0	-1.1	2.93	20.0	0.99
512045	1201051810	01-APR-2006 13:50	DONE	0.54	-0.4	num	0.94	0	-1.1	2.93	20.0	0.99
515259	1201058706	01-APR-2006 14:24	DONE	1.02	0.09	num	0.94	0	-1.1	2.93	20.0	0.99
515558	1201059455	03-APR-2006 06:56	DONE	1.8	0.87	num	0.94	0	-1.1	2.93	20.0	0.99
515551	1201059427	03-APR-2006 06:56	DONE	1.73	0.8	num	0.94	0	-1.1	2.93	20.0	0.99
516219	1201060905	04-APR-2006 07:47	DONE	0.61	-0.33	num	0.94	0	-1.1	2.93	20.0	0.99
512063	1201051850	04-APR-2006 10:18	DONE	0.22	-0.72	num	0.94	0	-1.1	2.93	20.0	0.99
512069	1201051878	05-APR-2006 09:52	DONE	1.24	0.3	num	0.94	0	-1.1	2.93	20.0	0.99
515564	1201059471	05-APR-2006 15:35	DONE	0.89	-0.05	num	0.94	0	-1.1	2.93	20.0	0.99
517591	1201063934	05-APR-2006 21:53	DONE	0.41	-0.53	num	0.94	0	-1.1	2.93	20.0	0.99
517143	1201062896	06-APR-2006 08:11	DONE	0.86	-0.08	num	0.94	0	-1.1	2.93	20.0	0.99
516346	1201061154	06-APR-2006 13:23	DONE	0.46	-0.48	num	0.94	0	-1.1	2.93	20.0	0.99
518034	1201064929	08-APR-2006 15:43	DONE	0.13	-0.81	num	0.94	0	-1.1	2.93	20.0	0.99
517155	1201062932	08-APR-2006 15:43	DONE	0.41	-0.53	num	0.94	0	-1.1	2.93	20.0	0.99

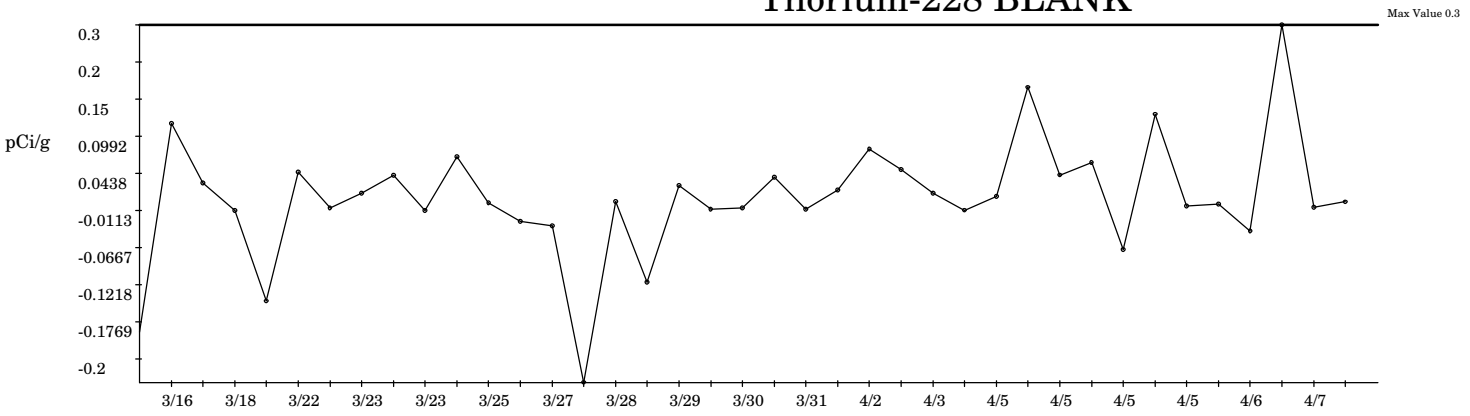
Uranium-238 SPIKE: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
503672	1201032614	16-FEB-2006 21:40	DONE	94	-0.7	percent	100	75.0	83.3	117	125	8.33
503668	1201032259	16-FEB-2006 21:41	DONE	99	-0.18	percent	100	75.0	83.3	117	125	8.33
503154	1201031112	17-FEB-2006 11:01	DUSE	1350	150	percent	100	75.0	83.3	117	125	8.33
505620	1201036924	21-FEB-2006 23:51	DONE	106	0.72	percent	100	75.0	83.3	117	125	8.33
505875	1201037477	23-FEB-2006 10:53	DONE	2102	240	percent	100	75.0	83.3	117	125	8.33
507246	1201040730	28-FEB-2006 15:46	DONE	203	12	percent	100	75.0	83.3	117	125	8.33
507176	1201040560	28-FEB-2006 20:08	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
504464	1201034139	28-FEB-2006 20:08	DONE	99	-0.14	percent	100	75.0	83.3	117	125	8.33
504465	1201034143	01-MAR-2006 16:22	DONE	107	0.84	percent	100	75.0	83.3	117	125	8.33
504468	1201034155	01-MAR-2006 16:22	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
508045	1201042751	02-MAR-2006 22:23	DONE	98	-0.26	percent	100	75.0	83.3	117	125	8.33
506034	1201037875	03-MAR-2006 15:56	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
504175	1201033489	08-MAR-2006 08:59	DONE	112	1.4	percent	100	75.0	83.3	117	125	8.33
509084	1201045147	08-MAR-2006 13:55	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
508588	1201044007	09-MAR-2006 15:47	DONE	115	1.8	percent	100	75.0	83.3	117	125	8.33
508590	1201044015	09-MAR-2006 18:21	DONE	106	0.72	percent	100	75.0	83.3	117	125	8.33
511711	1201051089	15-MAR-2006 09:16	DONE	115	1.8	percent	100	75.0	83.3	117	125	8.33
510648	1201048637	16-MAR-2006 09:25	DONE	113	1.6	percent	100	75.0	83.3	117	125	8.33
509833	1201046787	16-MAR-2006 10:10	DONE	49	-6	percent	100	75.0	83.3	117	125	8.33
512186	1201052166	18-MAR-2006 09:47	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
512000	1201051709	22-MAR-2006 19:22	DONE	98	-0.26	percent	100	75.0	83.3	117	125	8.33
513417	1201054862	23-MAR-2006 23:50	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
513419	1201054870	26-MAR-2006 07:39	DONE	93	-0.86	percent	100	75.0	83.3	117	125	8.33
506038	1201037887	28-MAR-2006 16:43	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
515154	1201058501	28-MAR-2006 22:08	DONE	138	4.6	percent	100	75.0	83.3	117	125	8.33
514145	1201056279	29-MAR-2006 22:27	DONE	99	-0.12	percent	100	75.0	83.3	117	125	8.33

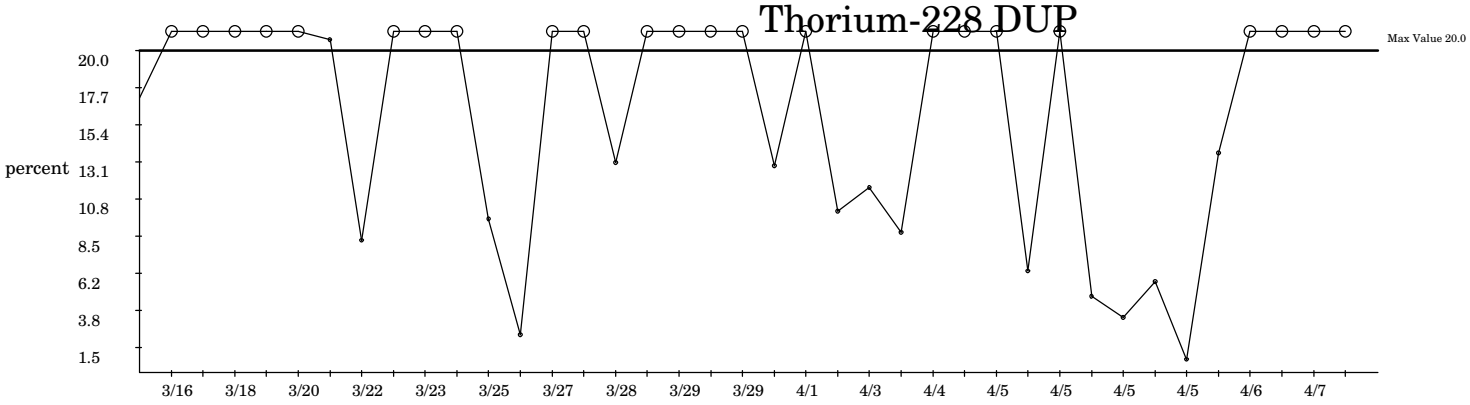
515262	1201058715	31-MAR-2006 07:47	DONE	99	-0.1	percent	100	75.0	83.3	117	125	8.33
514172	1201056343	01-APR-2006 09:22	DONE	4	-10	percent	100	75.0	83.3	117	125	8.33
515259	1201058707	01-APR-2006 09:22	DONE	93	-0.88	percent	100	75.0	83.3	117	125	8.33
515558	1201059456	03-APR-2006 06:56	DONE	95	-0.62	percent	100	75.0	83.3	117	125	8.33
515551	1201059428	03-APR-2006 06:56	DONE	114	1.7	percent	100	75.0	83.3	117	125	8.33
516219	1201060906	04-APR-2006 07:47	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
512063	1201051851	04-APR-2006 10:18	DONE	98	-0.19	percent	100	75.0	83.3	117	125	8.33
512069	1201051879	05-APR-2006 09:52	DONE	95	-0.62	percent	100	75.0	83.3	117	125	8.33
517143	1201062897	06-APR-2006 08:11	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
517591	1201063935	06-APR-2006 08:11	DONE	104	0.47	percent	100	75.0	83.3	117	125	8.33
516346	1201061155	06-APR-2006 13:23	DONE	100	0	percent	100	75.0	83.3	117	125	8.33
518034	1201064930	08-APR-2006 15:43	DONE	-221	-40	percent	100	75.0	83.3	117	125	8.33
517155	1201062933	08-APR-2006 15:43	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33

SPC Graph for Alpha SpecThorium in Solids 4/10/2006

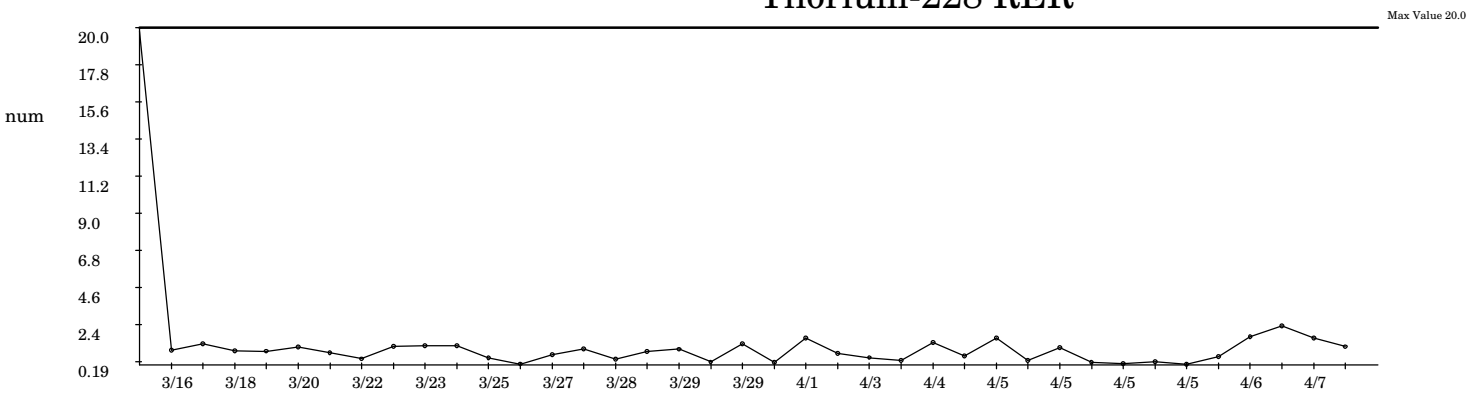
Thorium-228 BLANK



Thorium-228 DUP



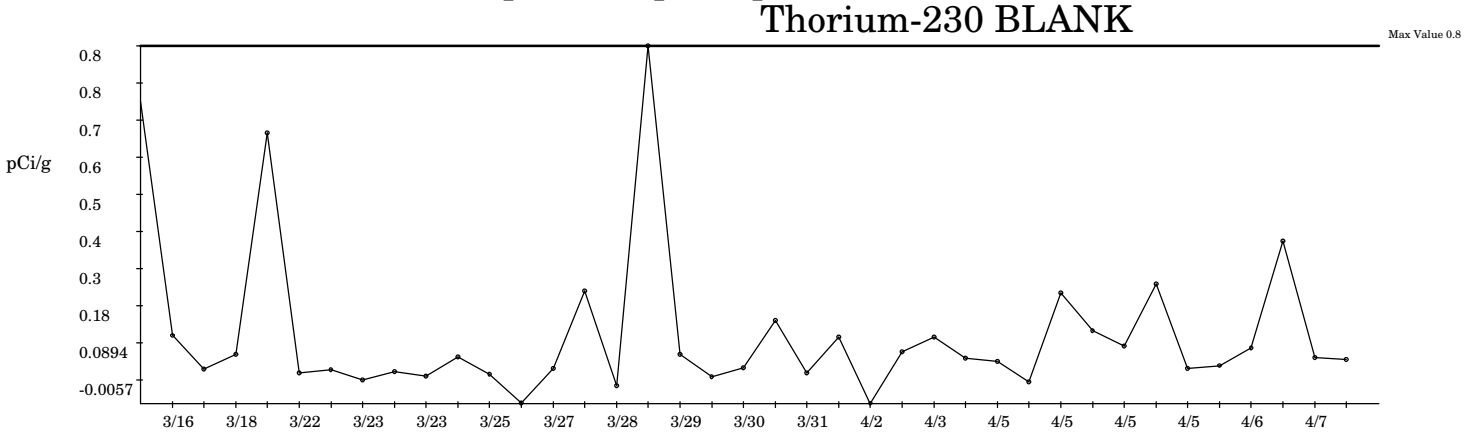
Thorium-228 RER



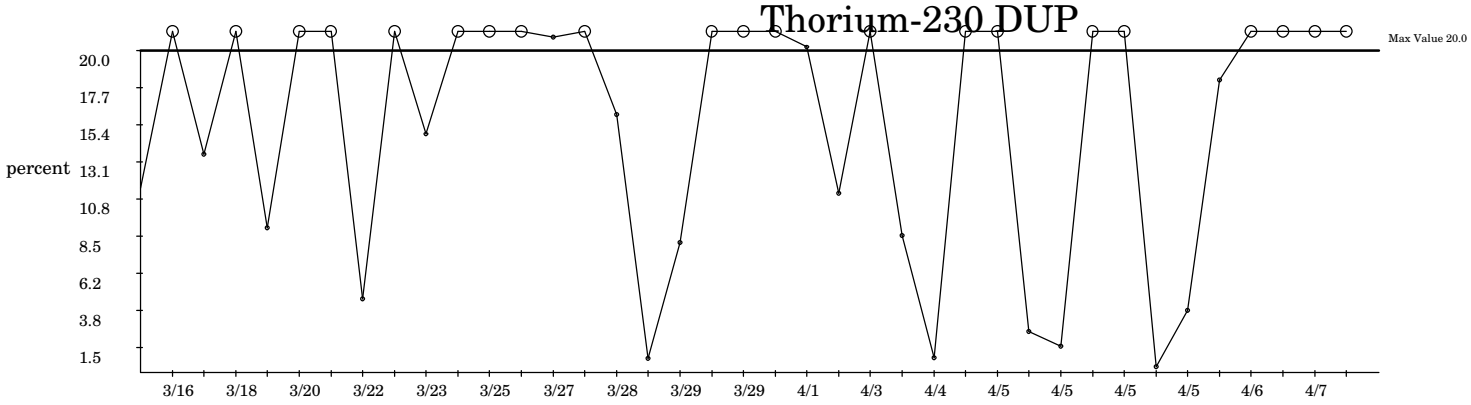
○ Denotes Outlier

SPC Graph for Alpha SpecThorium in Solids 4/10/2006

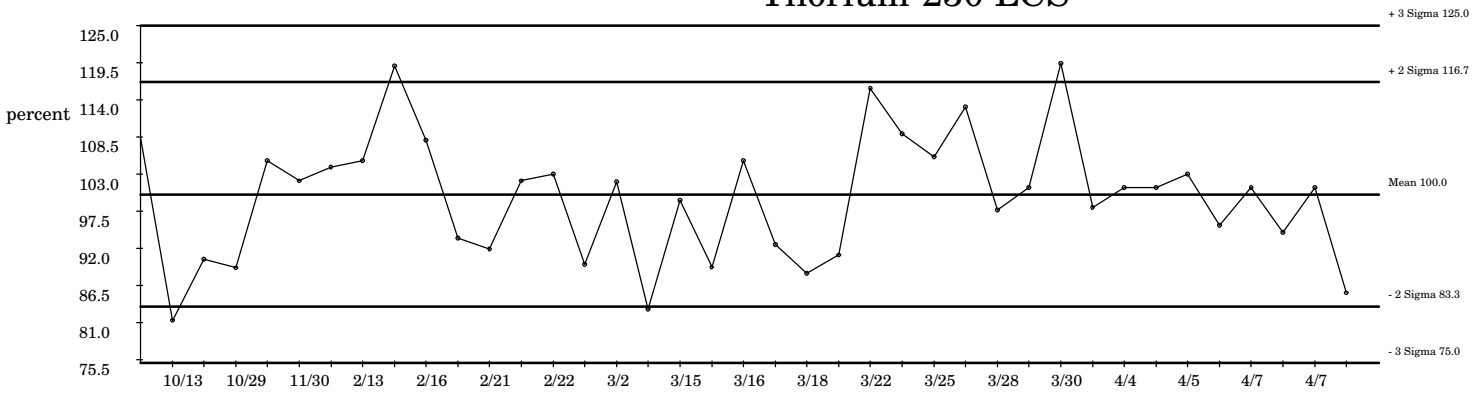
Thorium-230 BLANK



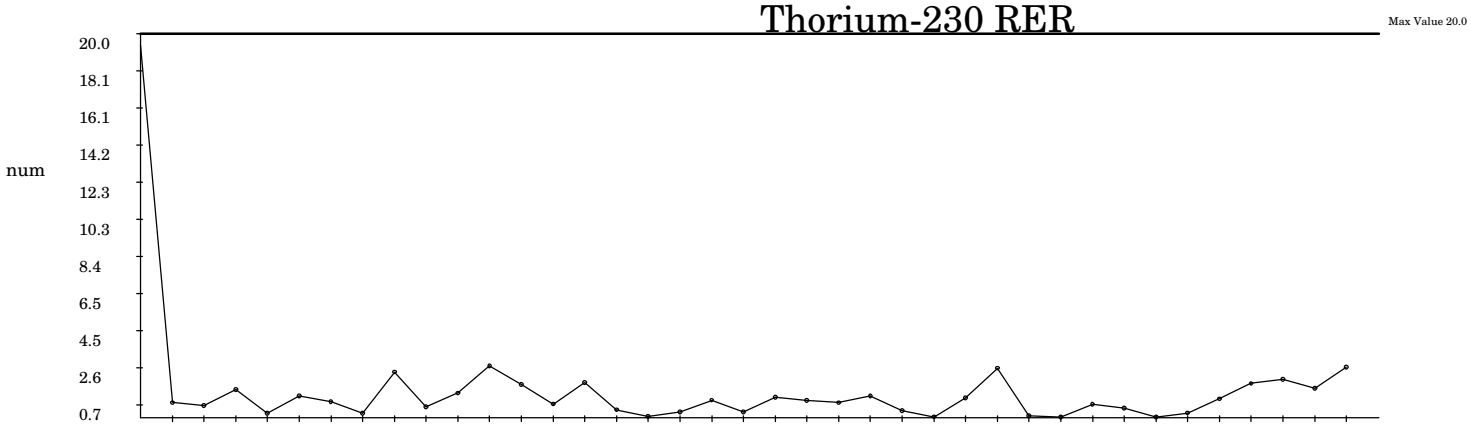
Thorium-230 DUP



Thorium-230 LCS

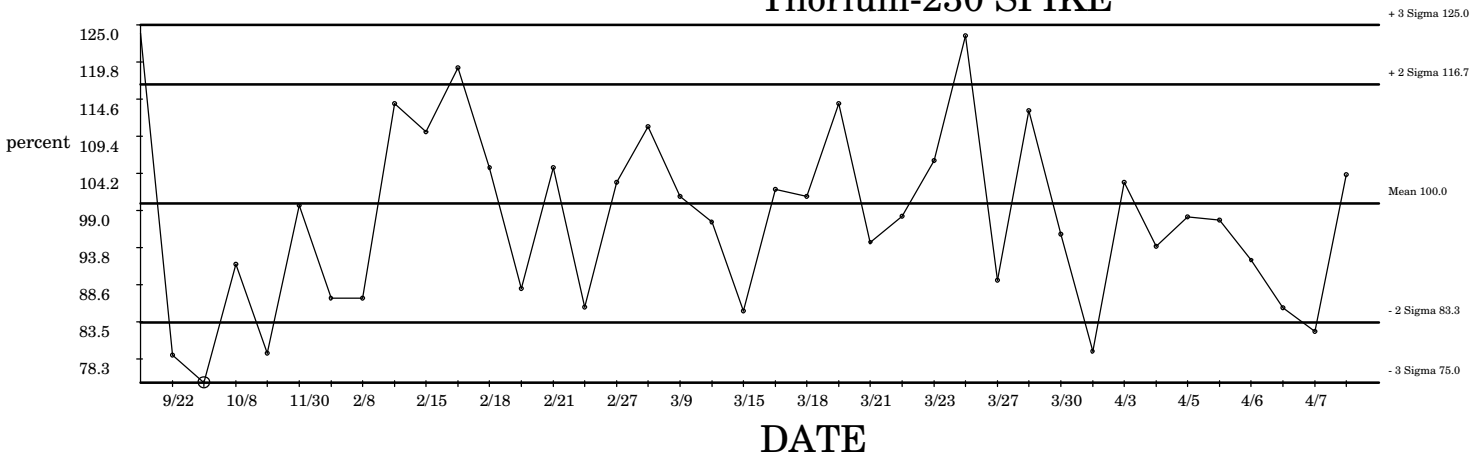


Thorium-230 RER



○ Denotes Outlier

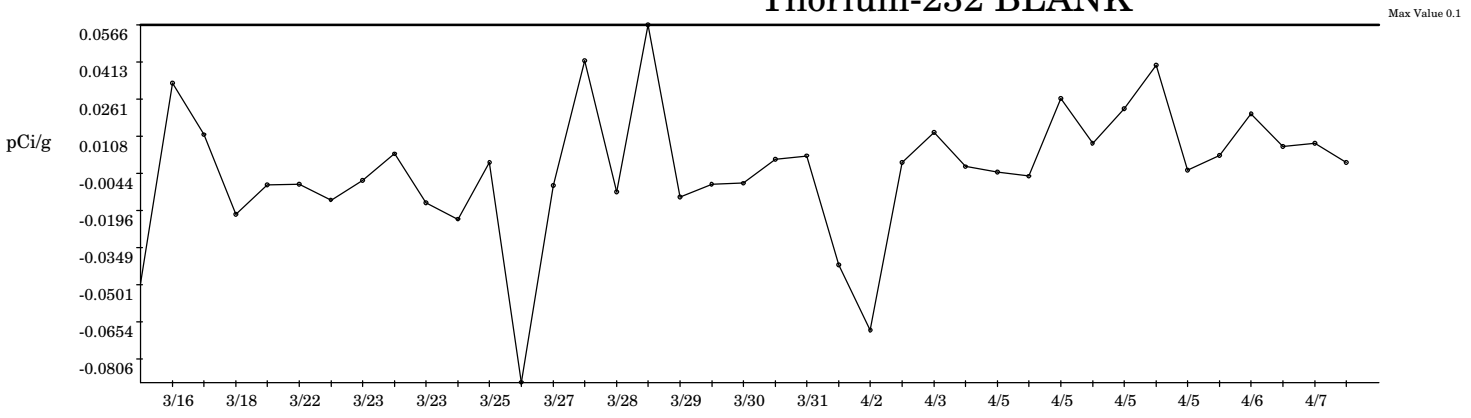
SPC Graph for Alpha SpecThorium in Solids 4/10/2006
Thorium-230 SPIKE



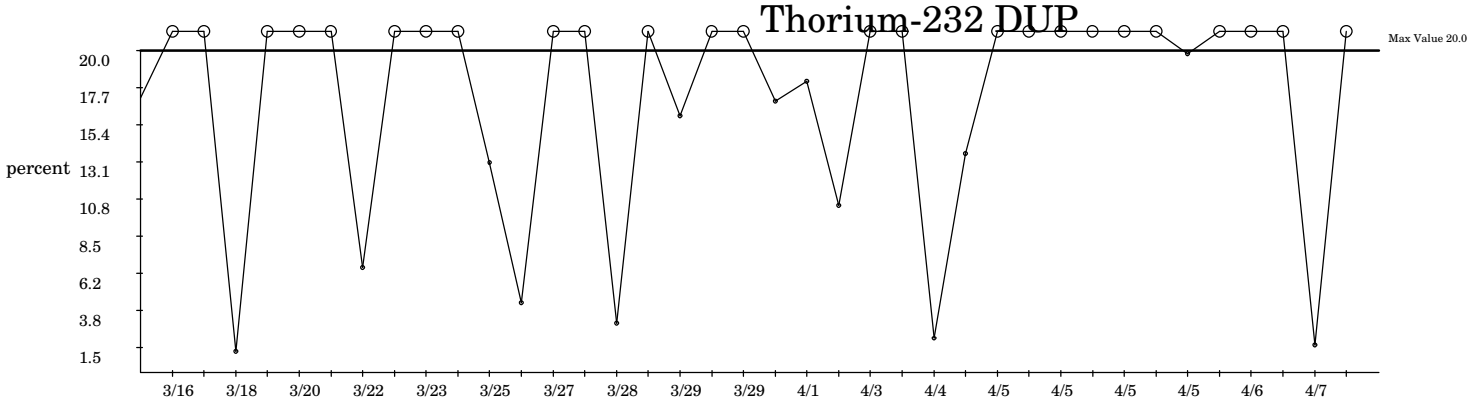
○ Denotes Outlier

SPC Graph for Alpha SpecThorium in Solids 4/10/2006

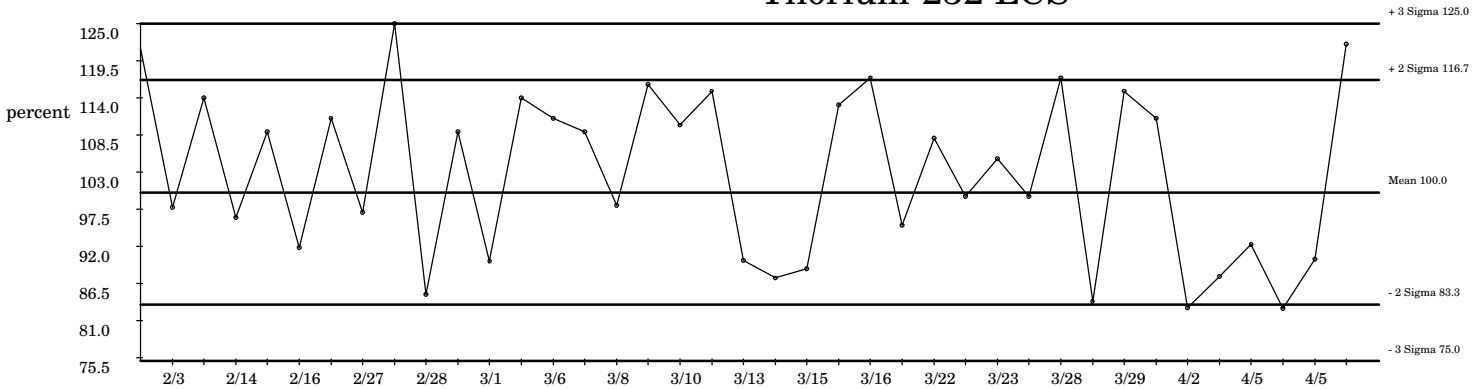
Thorium-232 BLANK



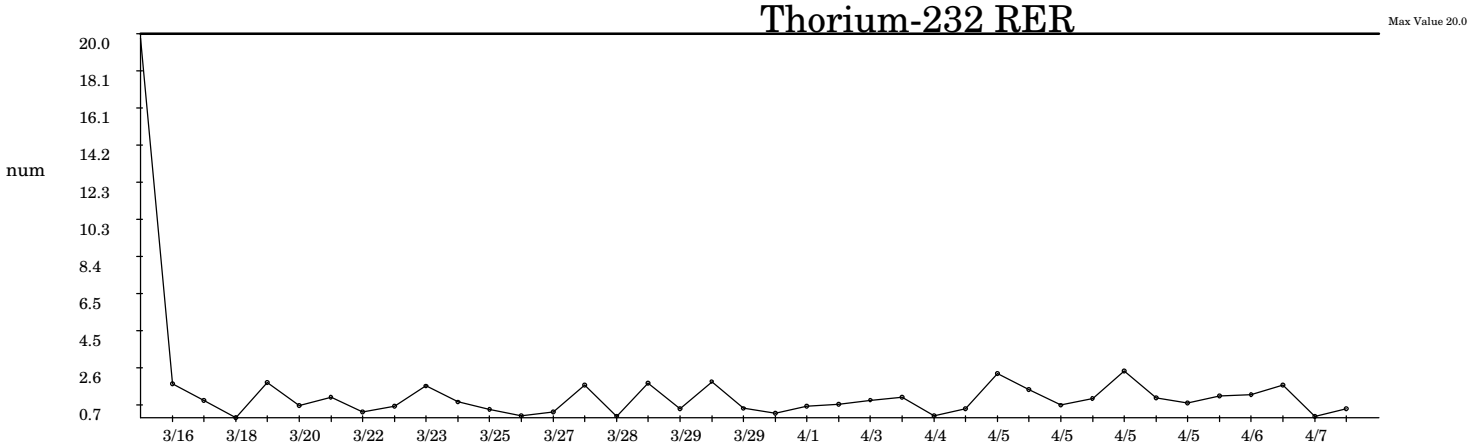
Thorium-232 DUP



Thorium-232 LCS

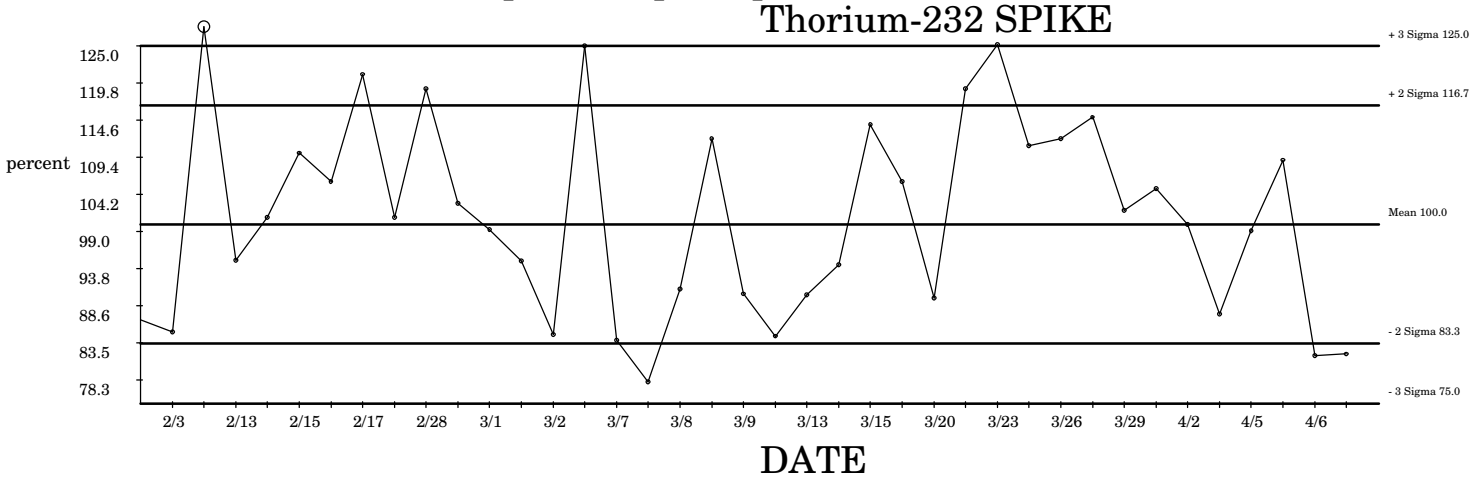


Thorium-232 RER



○ Denotes Outlier

SPC Graph for Alpha SpecThorium in Solids 4/10/2006
Thorium-232 SPIKE



○ Denotes Outlier

Data used for Alpha SpecThorium in Solids 11-APR-2006

Thorium-228 BLANK: Limits LCL = -.3 UCL = .3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
509059	1201045077	16-MAR-2006 08:39	DONE	0	2	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
510647	1201048631	16-MAR-2006 10:55	DONE	0	1.1	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
511635	1201050914	18-MAR-2006 15:00	DUSE	0	0.15	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
511985	1201051674	18-MAR-2006 15:00	DUSE	0	-0.32	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
511630	1201050905	20-MAR-2006 07:42	DONE	0	-2	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
511996	1201051700	22-MAR-2006 14:23	DONE	0	0.34	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
513053	1201054070	22-MAR-2006 19:41	DUSE	0	-0.27	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
513051	1201054062	23-MAR-2006 08:31	DUSE	0	-0.03	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
511992	1201051686	23-MAR-2006 21:21	DONE	0	0.28	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
513052	1201054066	23-MAR-2006 23:50	DUSE	0	-0.31	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
513416	1201054856	24-MAR-2006 12:39	DONE	0	0.59	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
514672	1201057502	25-MAR-2006 19:34	DUSE	0	-0.18	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
513418	1201054864	26-MAR-2006 07:39	DONE	0	-0.49	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
513759	1201055494	27-MAR-2006 17:14	DUSE	0	-0.57	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
513435	1201054914	28-MAR-2006 11:41	DONE	0	-3	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
512017	1201051748	28-MAR-2006 16:43	DUSE	0	-0.16	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
514175	1201056354	29-MAR-2006 15:32	DUSE	0	-2	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
515260	1201058709	29-MAR-2006 16:59	DONE	0	0.11	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
515263	1201058717	29-MAR-2006 22:27	DUSE	0	-0.29	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
515264	1201058721	30-MAR-2006 09:13	DUSE	0	-0.26	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
514144	1201056273	30-MAR-2006 18:04	DONE	0	0.25	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
515871	1201060180	31-MAR-2006 23:48	DUSE	0	-0.28	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
515258	1201058701	01-APR-2006 09:23	DONE	0	0.03	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
515550	1201059422	02-APR-2006 07:36	DONE	0	0.72	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
515556	1201059443	03-APR-2006 06:56	DUSE	0	0.38	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
516132	1201060710	03-APR-2006 12:42	DUSE	0	-0.03	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
516806	1201062214	04-APR-2006 22:21	DUSE	0	-0.31	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
516800	1201062199	05-APR-2006 09:51	DUSE	0	-0.08	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
512068	1201051873	05-APR-2006 09:52	DONE	0	1.8	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
512060	1201051841	05-APR-2006 10:05	DONE	0	0.28	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
517558	1201063868	05-APR-2006 15:35	DONE	0	0.49	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
517144	1201062899	05-APR-2006 15:35	DONE	0	-0.96	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
515901	1201060261	05-APR-2006 19:49	DUSE	0	1.3	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
517138	1201062879	05-APR-2006 19:53	DUSE	0	-0.24	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
517139	1201062883	06-APR-2006 08:11	DUSE	0	-0.2	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
516344	1201061149	06-APR-2006 13:23	DONE	0	-0.66	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
517153	1201062927	07-APR-2006 18:07	DONE	0	2.8	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
518029	1201064909	07-APR-2006 23:26	DUSE	0	-0.26	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09
518036	1201064937	07-APR-2006 23:26	DUSE	0	-0.17	pCi/g	0.02	-0.25	-0.161	0.19	0.28	0.09

Thorium-228 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
511710	1201051084	15-MAR-2006 13:59	DONE	3	-0.79	percent	39.2	0	-53	131	20.0	45.9
509059	1201045078	16-MAR-2006 08:39	DONE	36	-0.06	percent	39.2	0	-53	131	20.0	45.9
510647	1201048632	16-MAR-2006 23:45	DONE	42	0.05	percent	39.2	0	-53	131	20.0	45.9
511635	1201050915	18-MAR-2006 15:00	DUSE	85	0.99	percent	39.2	0	-53	131	20.0	45.9

511985	1201051675	18-MAR-2006 15:00	DUSE	90	1.1	percent	39.2	0	-53	131	20.0	45.9
511630	1201050906	20-MAR-2006 07:42	DONE	22	-0.38	percent	39.2	0	-53	131	20.0	45.9
513052	1201054067	22-MAR-2006 12:16	DUSE	21	-0.4	percent	39.2	0	-53	131	20.0	45.9
511996	1201051701	22-MAR-2006 14:23	DONE	8	-0.68	percent	39.2	0	-53	131	20.0	45.9
513053	1201054071	22-MAR-2006 19:41	DUSE	112	1.6	percent	39.2	0	-53	131	20.0	45.9
513051	1201054063	23-MAR-2006 08:31	DUSE	36	-0.07	percent	39.2	0	-53	131	20.0	45.9
513416	1201054857	23-MAR-2006 23:50	DONE	50	0.24	percent	39.2	0	-53	131	20.0	45.9
511992	1201051687	25-MAR-2006 19:34	DONE	10	-0.65	percent	39.2	0	-53	131	20.0	45.9
513418	1201054865	26-MAR-2006 07:39	DONE	2	-0.8	percent	39.2	0	-53	131	20.0	45.9
513759	1201055495	27-MAR-2006 17:14	DUSE	48	0.19	percent	39.2	0	-53	131	20.0	45.9
513435	1201054915	28-MAR-2006 11:41	DONE	36	-0.07	percent	39.2	0	-53	131	20.0	45.9
512017	1201051749	28-MAR-2006 16:43	DUSE	13	-0.57	percent	39.2	0	-53	131	20.0	45.9
514175	1201056355	29-MAR-2006 15:32	DUSE	26	-0.3	percent	39.2	0	-53	131	20.0	45.9
514144	1201056274	29-MAR-2006 19:54	DONE	39	-0	percent	39.2	0	-53	131	20.0	45.9
515263	1201058718	29-MAR-2006 22:27	DUSE	48	0.18	percent	39.2	0	-53	131	20.0	45.9
515260	1201058710	29-MAR-2006 22:27	DONE	87	1	percent	39.2	0	-53	131	20.0	45.9
515264	1201058722	30-MAR-2006 09:13	DUSE	13	-0.57	percent	39.2	0	-53	131	20.0	45.9
515258	1201058702	01-APR-2006 09:23	DONE	44	0.11	percent	39.2	0	-53	131	20.0	45.9
515550	1201059423	02-APR-2006 07:36	DONE	10	-0.64	percent	39.2	0	-53	131	20.0	45.9
515556	1201059444	03-APR-2006 06:56	DUSE	12	-0.6	percent	39.2	0	-53	131	20.0	45.9
516132	1201060711	03-APR-2006 12:42	DUSE	9	-0.66	percent	39.2	0	-53	131	20.0	45.9
515871	1201060181	04-APR-2006 07:44	DUSE	33	-0.13	percent	39.2	0	-53	131	20.0	45.9
516806	1201062215	05-APR-2006 08:19	DUSE	23	-0.34	percent	39.2	0	-53	131	20.0	45.9
516800	1201062200	05-APR-2006 09:51	DUSE	258	4.8	percent	39.2	0	-53	131	20.0	45.9
512068	1201051874	05-APR-2006 09:52	DONE	6	-0.72	percent	39.2	0	-53	131	20.0	45.9
512060	1201051842	05-APR-2006 10:05	DONE	29	-0.21	percent	39.2	0	-53	131	20.0	45.9
517558	1201063869	05-APR-2006 15:35	DONE	5	-0.75	percent	39.2	0	-53	131	20.0	45.9
517144	1201062900	05-APR-2006 15:35	DONE	3	-0.78	percent	39.2	0	-53	131	20.0	45.9
515901	1201060262	05-APR-2006 17:13	DUSE	6	-0.73	percent	39.2	0	-53	131	20.0	45.9
517138	1201062880	05-APR-2006 19:53	DUSE	1	-0.84	percent	39.2	0	-53	131	20.0	45.9
517139	1201062884	06-APR-2006 08:11	DUSE	14	-0.56	percent	39.2	0	-53	131	20.0	45.9
516344	1201061150	06-APR-2006 13:23	DONE	50	0.24	percent	39.2	0	-53	131	20.0	45.9
517153	1201062928	07-APR-2006 18:07	DONE	53	0.3	percent	39.2	0	-53	131	20.0	45.9
518029	1201064910	07-APR-2006 23:26	DUSE	57	0.39	percent	39.2	0	-53	131	20.0	45.9
518036	1201064938	07-APR-2006 23:26	DUSE	90	1.1	percent	39.2	0	-53	131	20.0	45.9

Thorium-228 RER: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
511710	1201051084	15-MAR-2006 13:59	DONE	0.23	-1	num	0.78	0	-0.304	1.87	20.0	0.54
509059	1201045078	16-MAR-2006 08:39	DONE	0.89	0.19	num	0.78	0	-0.304	1.87	20.0	0.54
510647	1201048632	16-MAR-2006 23:45	DONE	1.27	0.89	num	0.78	0	-0.304	1.87	20.0	0.54
511635	1201050915	18-MAR-2006 15:00	DUSE	0.83	0.08	num	0.78	0	-0.304	1.87	20.0	0.54
511985	1201051675	18-MAR-2006 15:00	DUSE	0.81	0.05	num	0.78	0	-0.304	1.87	20.0	0.54
511630	1201050906	20-MAR-2006 07:42	DONE	1.06	0.5	num	0.78	0	-0.304	1.87	20.0	0.54
513052	1201054067	22-MAR-2006 12:16	DUSE	0.71	-0.13	num	0.78	0	-0.304	1.87	20.0	0.54
511996	1201051701	22-MAR-2006 14:23	DONE	0.37	-0.77	num	0.78	0	-0.304	1.87	20.0	0.54
513053	1201054071	22-MAR-2006 19:41	DUSE	1.11	0.6	num	0.78	0	-0.304	1.87	20.0	0.54
513051	1201054063	23-MAR-2006 08:31	DUSE	1.15	0.67	num	0.78	0	-0.304	1.87	20.0	0.54
513416	1201054857	23-MAR-2006 23:50	DONE	1.15	0.67	num	0.78	0	-0.304	1.87	20.0	0.54
511992	1201051687	25-MAR-2006 19:34	DONE	0.4	-0.7	num	0.78	0	-0.304	1.87	20.0	0.54

513418	1201054865	26-MAR-2006 07:39	DONE	0.06	-1	num	0.78	0	-0.304	1.87	20.0	0.54
513759	1201055495	27-MAR-2006 17:14	DUSE	0.59	-0.36	num	0.78	0	-0.304	1.87	20.0	0.54
513435	1201054915	28-MAR-2006 11:41	DONE	0.96	0.33	num	0.78	0	-0.304	1.87	20.0	0.54
512017	1201051749	28-MAR-2006 16:43	DUSE	0.36	-0.79	num	0.78	0	-0.304	1.87	20.0	0.54
514175	1201056355	29-MAR-2006 15:32	DUSE	0.78	-0	num	0.78	0	-0.304	1.87	20.0	0.54
514144	1201056274	29-MAR-2006 19:54	DONE	0.93	0.28	num	0.78	0	-0.304	1.87	20.0	0.54
515263	1201058718	29-MAR-2006 22:27	DUSE	0.18	-1	num	0.78	0	-0.304	1.87	20.0	0.54
515260	1201058710	29-MAR-2006 22:27	DONE	1.27	0.89	num	0.78	0	-0.304	1.87	20.0	0.54
515264	1201058722	30-MAR-2006 09:13	DUSE	0.17	-1	num	0.78	0	-0.304	1.87	20.0	0.54
515258	1201058702	01-APR-2006 09:23	DONE	1.58	1.5	num	0.78	0	-0.304	1.87	20.0	0.54
515550	1201059423	02-APR-2006 07:36	DONE	0.67	-0.2	num	0.78	0	-0.304	1.87	20.0	0.54
515556	1201059444	03-APR-2006 06:56	DUSE	0.43	-0.65	num	0.78	0	-0.304	1.87	20.0	0.54
516132	1201060711	03-APR-2006 12:42	DUSE	0.27	-0.94	num	0.78	0	-0.304	1.87	20.0	0.54
515871	1201060181	04-APR-2006 07:44	DUSE	1.33	1	num	0.78	0	-0.304	1.87	20.0	0.54
516806	1201062215	05-APR-2006 08:19	DUSE	0.53	-0.46	num	0.78	0	-0.304	1.87	20.0	0.54
516800	1201062200	05-APR-2006 09:51	DUSE	1.58	1.5	num	0.78	0	-0.304	1.87	20.0	0.54
512068	1201051874	05-APR-2006 09:52	DONE	0.27	-0.94	num	0.78	0	-0.304	1.87	20.0	0.54
512060	1201051842	05-APR-2006 10:05	DONE	1.02	0.43	num	0.78	0	-0.304	1.87	20.0	0.54
517558	1201063869	05-APR-2006 15:35	DONE	0.17	-1	num	0.78	0	-0.304	1.87	20.0	0.54
517144	1201062900	05-APR-2006 15:35	DONE	0.07	-1	num	0.78	0	-0.304	1.87	20.0	0.54
515901	1201060262	05-APR-2006 17:13	DUSE	0.18	-1	num	0.78	0	-0.304	1.87	20.0	0.54
517138	1201062880	05-APR-2006 19:53	DUSE	0.02	-1	num	0.78	0	-0.304	1.87	20.0	0.54
517139	1201062884	06-APR-2006 08:11	DUSE	0.5	-0.53	num	0.78	0	-0.304	1.87	20.0	0.54
516344	1201061150	06-APR-2006 13:23	DONE	1.67	1.6	num	0.78	0	-0.304	1.87	20.0	0.54
517153	1201062928	07-APR-2006 18:07	DONE	2.31	2.8	num	0.78	0	-0.304	1.87	20.0	0.54
518029	1201064910	07-APR-2006 23:26	DUSE	1.58	1.5	num	0.78	0	-0.304	1.87	20.0	0.54
518036	1201064938	07-APR-2006 23:26	DUSE	1.08	0.55	num	0.78	0	-0.304	1.87	20.0	0.54

Thorium-230 BLANK: Limits LCL = -.4 UCL = .6

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
509059	1201045077	16-MAR-2006 08:39	DONE	0	-0.11	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
510647	1201048631	16-MAR-2006 10:55	DONE	0	0.06	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
511635	1201050914	18-MAR-2006 15:00	DONE	0	-0.44	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
511985	1201051674	18-MAR-2006 15:00	DONE	0	-0.21	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
511630	1201050905	20-MAR-2006 07:42	DONE	1	3	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
511996	1201051700	22-MAR-2006 14:23	DONE	0	-0.49	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
513053	1201054070	22-MAR-2006 19:41	DONE	0	-0.44	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
513051	1201054062	23-MAR-2006 08:31	DONE	0	-0.59	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
511992	1201051686	23-MAR-2006 21:21	DONE	0	-0.47	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
513052	1201054066	23-MAR-2006 23:50	DONE	0	-0.53	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
513416	1201054856	24-MAR-2006 12:39	DONE	0	-0.25	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
514672	1201057502	25-MAR-2006 19:34	DONE	0	-0.5	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
513418	1201054864	26-MAR-2006 07:39	DONE	0	-0.93	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
513759	1201055494	27-MAR-2006 17:14	DONE	0	-0.42	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
513435	1201054914	28-MAR-2006 11:41	DONE	0	0.72	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
512017	1201051748	28-MAR-2006 16:43	DUSE	0	-0.68	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
514175	1201056354	29-MAR-2006 15:32	DUSE	1	4.3	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
515260	1201058709	29-MAR-2006 16:59	DONE	0	-0.22	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
515263	1201058717	29-MAR-2006 22:27	DONE	0	-0.55	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
515264	1201058721	30-MAR-2006 09:13	DONE	0	-0.41	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17

514144	1201056273	30-MAR-2006 18:04	DONE	0	0.29	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
515871	1201060180	31-MAR-2006 23:48	DONE	0	-0.49	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
515258	1201058701	01-APR-2006 09:23	DONE	0	0.04	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
515550	1201059422	02-APR-2006 07:36	DONE	0	-0.94	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
515556	1201059443	03-APR-2006 06:56	DUSE	0	-0.18	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
516132	1201060710	03-APR-2006 12:42	DONE	0	0.04	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
516806	1201062214	04-APR-2006 22:21	DONE	0	-0.27	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
516800	1201062199	05-APR-2006 09:51	DONE	0	-0.32	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
512068	1201051873	05-APR-2006 09:52	DONE	0	-0.62	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
512060	1201051841	05-APR-2006 10:05	DONE	0	0.69	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
517558	1201063868	05-APR-2006 15:35	DONE	0	0.13	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
517144	1201062899	05-APR-2006 15:35	DONE	0	-0.09	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
515901	1201060261	05-APR-2006 19:49	DUSE	0	0.82	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
517138	1201062879	05-APR-2006 19:53	DONE	0	-0.42	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
517139	1201062883	06-APR-2006 08:11	DONE	0	-0.38	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
516344	1201061149	06-APR-2006 13:23	DONE	0	-0.12	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
517153	1201062927	07-APR-2006 18:07	DONE	0	1.5	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
518029	1201064909	07-APR-2006 23:26	DONE	0	-0.26	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17
518036	1201064937	07-APR-2006 23:26	DONE	0	-0.29	pCi/g	0.1	-0.424	-0.25	0.44	0.62	0.17

Thorium-230 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
511710	1201051084	15-MAR-2006 13:59	DONE	9	-0.78	percent	29.3	0	-24	82.2	20.0	26.4
509059	1201045078	16-MAR-2006 08:39	DONE	32	0.09	percent	29.3	0	-24	82.2	20.0	26.4
510647	1201048632	16-MAR-2006 23:45	DONE	14	-0.6	percent	29.3	0	-24	82.2	20.0	26.4
511635	1201050915	18-MAR-2006 15:00	DONE	57	1	percent	29.3	0	-24	82.2	20.0	26.4
511985	1201051675	18-MAR-2006 15:00	DONE	9	-0.77	percent	29.3	0	-24	82.2	20.0	26.4
511630	1201050906	20-MAR-2006 07:42	DONE	52	0.85	percent	29.3	0	-24	82.2	20.0	26.4
513052	1201054067	22-MAR-2006 12:16	DONE	23	-0.22	percent	29.3	0	-24	82.2	20.0	26.4
511996	1201051701	22-MAR-2006 14:23	DONE	5	-0.93	percent	29.3	0	-24	82.2	20.0	26.4
513053	1201054071	22-MAR-2006 19:41	DONE	80	1.9	percent	29.3	0	-24	82.2	20.0	26.4
513051	1201054063	23-MAR-2006 08:31	DONE	15	-0.55	percent	29.3	0	-24	82.2	20.0	26.4
513416	1201054857	23-MAR-2006 23:50	DONE	40	0.41	percent	29.3	0	-24	82.2	20.0	26.4
511992	1201051687	25-MAR-2006 19:34	DONE	34	0.17	percent	29.3	0	-24	82.2	20.0	26.4
513418	1201054865	26-MAR-2006 07:39	DONE	64	1.3	percent	29.3	0	-24	82.2	20.0	26.4
513759	1201055495	27-MAR-2006 17:14	DONE	21	-0.32	percent	29.3	0	-24	82.2	20.0	26.4
513435	1201054915	28-MAR-2006 11:41	DONE	122	3.5	percent	29.3	0	-24	82.2	20.0	26.4
512017	1201051749	28-MAR-2006 16:43	DUSE	16	-0.5	percent	29.3	0	-24	82.2	20.0	26.4
514175	1201056355	29-MAR-2006 15:32	DUSE	1	-1	percent	29.3	0	-24	82.2	20.0	26.4
514144	1201056274	29-MAR-2006 19:54	DONE	8	-0.8	percent	29.3	0	-24	82.2	20.0	26.4
515263	1201058718	29-MAR-2006 22:27	DONE	35	0.23	percent	29.3	0	-24	82.2	20.0	26.4
515260	1201058710	29-MAR-2006 22:27	DONE	23	-0.25	percent	29.3	0	-24	82.2	20.0	26.4
515264	1201058722	30-MAR-2006 09:13	DONE	32	0.1	percent	29.3	0	-24	82.2	20.0	26.4
515258	1201058702	01-APR-2006 09:23	DONE	20	-0.34	percent	29.3	0	-24	82.2	20.0	26.4
515550	1201059423	02-APR-2006 07:36	DONE	11	-0.69	percent	29.3	0	-24	82.2	20.0	26.4
515556	1201059444	03-APR-2006 06:56	DUSE	30	0.02	percent	29.3	0	-24	82.2	20.0	26.4
516132	1201060711	03-APR-2006 12:42	DONE	9	-0.79	percent	29.3	0	-24	82.2	20.0	26.4
515871	1201060181	04-APR-2006 07:44	DONE	1	-1	percent	29.3	0	-24	82.2	20.0	26.4
516806	1201062215	05-APR-2006 08:19	DONE	28	-0.07	percent	29.3	0	-24	82.2	20.0	26.4
516800	1201062200	05-APR-2006 09:51	DONE	70	1.6	percent	29.3	0	-24	82.2	20.0	26.4

512068	1201051874	05-APR-2006 09:52	DONE	3	-1	percent	29.3	0	-24	82.2	20.0	26.4
512060	1201051842	05-APR-2006 10:05	DONE	2	-1	percent	29.3	0	-24	82.2	20.0	26.4
517558	1201063869	05-APR-2006 15:35	DONE	21	-0.3	percent	29.3	0	-24	82.2	20.0	26.4
517144	1201062900	05-APR-2006 15:35	DONE	25	-0.14	percent	29.3	0	-24	82.2	20.0	26.4
515901	1201060262	05-APR-2006 17:13	DUSE	0	-1	percent	29.3	0	-24	82.2	20.0	26.4
517138	1201062880	05-APR-2006 19:53	DONE	4	-0.96	percent	29.3	0	-24	82.2	20.0	26.4
517139	1201062884	06-APR-2006 08:11	DONE	18	-0.42	percent	29.3	0	-24	82.2	20.0	26.4
516344	1201061150	06-APR-2006 13:23	DONE	55	0.96	percent	29.3	0	-24	82.2	20.0	26.4
517153	1201062928	07-APR-2006 18:07	DONE	56	01	percent	29.3	0	-24	82.2	20.0	26.4
518029	1201064910	07-APR-2006 23:26	DONE	34	0.18	percent	29.3	0	-24	82.2	20.0	26.4
518036	1201064938	07-APR-2006 23:26	DONE	66	1.4	percent	29.3	0	-24	82.2	20.0	26.4

Thorium-230 LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
468546	1200949878	08-OCT-2005 11:20	DONE	92	-1	percent	100	75.0	83.3	117	125	8.33
469909	1200953017	13-OCT-2005 14:33	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
474649	1200964500	26-OCT-2005 11:44	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
473628	1200962206	29-OCT-2005 17:54	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
477050	1200970382	12-NOV-2005 14:49	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
484101	1200987270	30-NOV-2005 14:54	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
501251	1201026784	08-FEB-2006 22:33	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
502256	1201029224	13-FEB-2006 20:20	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
503140	1201031089	15-FEB-2006 23:29	DONE	119	2.3	percent	100	75.0	83.3	117	125	8.33
503146	1201031097	16-FEB-2006 21:40	DONE	108	0.96	percent	100	75.0	83.3	117	125	8.33
504921	1201035218	18-FEB-2006 21:35	DONE	94	-0.78	percent	100	75.0	83.3	117	125	8.33
505231	1201036007	21-FEB-2006 23:52	DONE	92	-0.97	percent	100	75.0	83.3	117	125	8.33
505233	1201036015	21-FEB-2006 23:52	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
505622	1201036907	22-FEB-2006 21:19	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
505914	1201037581	28-FEB-2006 20:09	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
508120	1201042932	02-MAR-2006 22:23	DONE	102	0.22	percent	100	75.0	83.3	117	125	8.33
508286	1201043313	09-MAR-2006 22:56	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
511064	1201049593	15-MAR-2006 07:51	DONE	99	-0.11	percent	100	75.0	83.3	117	125	8.33
511066	1201049597	15-MAR-2006 09:16	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
509059	1201045080	16-MAR-2006 09:25	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
511635	1201050917	18-MAR-2006 15:00	DONE	93	-0.89	percent	100	75.0	83.3	117	125	8.33
511985	1201051677	18-MAR-2006 15:00	DONE	88	-1	percent	100	75.0	83.3	117	125	8.33
513053	1201054073	21-MAR-2006 17:40	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
513052	1201054069	22-MAR-2006 12:16	DONE	116	1.9	percent	100	75.0	83.3	117	125	8.33
513051	1201054065	23-MAR-2006 08:31	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
514672	1201057504	25-MAR-2006 19:34	DONE	106	0.67	percent	100	75.0	83.3	117	125	8.33
513759	1201055497	28-MAR-2006 14:57	DONE	113	1.6	percent	100	75.0	83.3	117	125	8.33
512017	1201051750	28-MAR-2006 16:43	DONE	98	-0.28	percent	100	75.0	83.3	117	125	8.33
515263	1201058720	29-MAR-2006 22:27	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
515264	1201058724	30-MAR-2006 09:13	DONE	119	2.3	percent	100	75.0	83.3	117	125	8.33
516132	1201060713	03-APR-2006 12:42	DONE	98	-0.23	percent	100	75.0	83.3	117	125	8.33
515871	1201060183	04-APR-2006 07:44	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
516806	1201062217	04-APR-2006 22:21	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
517138	1201062882	05-APR-2006 19:53	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
516800	1201062202	06-APR-2006 08:11	DONE	95	-0.55	percent	100	75.0	83.3	117	125	8.33
517139	1201062886	07-APR-2006 13:44	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33

518029	1201064912	07-APR-2006 23:26	DONE	94	-0.67	percent	100	75.0	83.3	117	125	8.33
518036	1201064940	07-APR-2006 23:26	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
517153	1201062930	08-APR-2006 08:46	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33

Thorium-230 RER: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
511710	1201051084	15-MAR-2006 13:59	DONE	0.6	-0.47	num	0.97	0	-0.569	2.5	20.0	0.77
509059	1201045078	16-MAR-2006 08:39	DONE	0.78	-0.24	num	0.97	0	-0.569	2.5	20.0	0.77
510647	1201048632	16-MAR-2006 23:45	DONE	0.64	-0.43	num	0.97	0	-0.569	2.5	20.0	0.77
511635	1201050915	18-MAR-2006 15:00	DONE	1.47	0.66	num	0.97	0	-0.569	2.5	20.0	0.77
511985	1201051675	18-MAR-2006 15:00	DONE	0.22	-0.97	num	0.97	0	-0.569	2.5	20.0	0.77
511630	1201050906	20-MAR-2006 07:42	DONE	1.15	0.24	num	0.97	0	-0.569	2.5	20.0	0.77
513052	1201054067	22-MAR-2006 12:16	DONE	0.83	-0.18	num	0.97	0	-0.569	2.5	20.0	0.77
511996	1201051701	22-MAR-2006 14:23	DONE	0.24	-0.95	num	0.97	0	-0.569	2.5	20.0	0.77
513053	1201054071	22-MAR-2006 19:41	DONE	2.38	1.8	num	0.97	0	-0.569	2.5	20.0	0.77
513051	1201054063	23-MAR-2006 08:31	DONE	0.55	-0.54	num	0.97	0	-0.569	2.5	20.0	0.77
513416	1201054857	23-MAR-2006 23:50	DONE	1.28	0.41	num	0.97	0	-0.569	2.5	20.0	0.77
511992	1201051687	25-MAR-2006 19:34	DONE	2.7	2.3	num	0.97	0	-0.569	2.5	20.0	0.77
513418	1201054865	26-MAR-2006 07:39	DONE	1.74	1	num	0.97	0	-0.569	2.5	20.0	0.77
513759	1201055495	27-MAR-2006 17:14	DONE	0.71	-0.33	num	0.97	0	-0.569	2.5	20.0	0.77
513435	1201054915	28-MAR-2006 11:41	DONE	1.83	1.1	num	0.97	0	-0.569	2.5	20.0	0.77
512017	1201051749	28-MAR-2006 16:43	DUSE	0.41	-0.72	num	0.97	0	-0.569	2.5	20.0	0.77
514175	1201056355	29-MAR-2006 15:32	DUSE	0.06	-1	num	0.97	0	-0.569	2.5	20.0	0.77
514144	1201056274	29-MAR-2006 19:54	DONE	0.31	-0.86	num	0.97	0	-0.569	2.5	20.0	0.77
515263	1201058718	29-MAR-2006 22:27	DONE	0.92	-0.07	num	0.97	0	-0.569	2.5	20.0	0.77
515260	1201058710	29-MAR-2006 22:27	DONE	0.31	-0.85	num	0.97	0	-0.569	2.5	20.0	0.77
515264	1201058722	30-MAR-2006 09:13	DONE	1.08	0.15	num	0.97	0	-0.569	2.5	20.0	0.77
515258	1201058702	01-APR-2006 09:23	DONE	0.9	-0.09	num	0.97	0	-0.569	2.5	20.0	0.77
515550	1201059423	02-APR-2006 07:36	DONE	0.78	-0.24	num	0.97	0	-0.569	2.5	20.0	0.77
515556	1201059444	03-APR-2006 06:56	DUSE	1.14	0.23	num	0.97	0	-0.569	2.5	20.0	0.77
516132	1201060711	03-APR-2006 12:42	DONE	0.38	-0.77	num	0.97	0	-0.569	2.5	20.0	0.77
515871	1201060181	04-APR-2006 07:44	DONE	0.05	-1	num	0.97	0	-0.569	2.5	20.0	0.77
516806	1201062215	05-APR-2006 08:19	DONE	1.04	0.09	num	0.97	0	-0.569	2.5	20.0	0.77
516800	1201062200	05-APR-2006 09:51	DONE	2.58	2.1	num	0.97	0	-0.569	2.5	20.0	0.77
512068	1201051874	05-APR-2006 09:52	DONE	0.11	-1	num	0.97	0	-0.569	2.5	20.0	0.77
512060	1201051842	05-APR-2006 10:05	DONE	0.04	-1	num	0.97	0	-0.569	2.5	20.0	0.77
517558	1201063869	05-APR-2006 15:35	DONE	0.71	-0.33	num	0.97	0	-0.569	2.5	20.0	0.77
517144	1201062900	05-APR-2006 15:35	DONE	0.5	-0.6	num	0.97	0	-0.569	2.5	20.0	0.77
515901	1201060262	05-APR-2006 17:13	DUSE	0.02	-1	num	0.97	0	-0.569	2.5	20.0	0.77
517138	1201062880	05-APR-2006 19:53	DONE	0.25	-0.93	num	0.97	0	-0.569	2.5	20.0	0.77
517139	1201062884	06-APR-2006 08:11	DONE	0.98	0.02	num	0.97	0	-0.569	2.5	20.0	0.77
516344	1201061150	06-APR-2006 13:23	DONE	1.78	1.1	num	0.97	0	-0.569	2.5	20.0	0.77
517153	1201062928	07-APR-2006 18:07	DONE	2.01	1.4	num	0.97	0	-0.569	2.5	20.0	0.77
518029	1201064910	07-APR-2006 23:26	DONE	1.54	0.74	num	0.97	0	-0.569	2.5	20.0	0.77
518036	1201064938	07-APR-2006 23:26	DONE	2.64	2.2	num	0.97	0	-0.569	2.5	20.0	0.77

Thorium-230 SPIKE: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
458331	1200925417	19-SEP-2005 17:20	DONE	76	-3	percent	100	75.0	83.3	117	125	8.33
458329	1200925413	22-SEP-2005 10:43	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33

458322	1200925401	22-SEP-2005 10:43	DONE	67	-4	percent	100	75.0	83.3	117	125	8.33
468546	1200949877	08-OCT-2005 11:20	DONE	92	-1	percent	100	75.0	83.3	117	125	8.33
474649	1200964499	26-OCT-2005 11:44	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
484101	1200987269	30-NOV-2005 14:54	DONE	100	-0.04	percent	100	75.0	83.3	117	125	8.33
501251	1201026783	08-FEB-2006 22:33	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
501251	1201026786	08-FEB-2006 22:33	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
502256	1201029223	13-FEB-2006 20:20	DONE	114	1.7	percent	100	75.0	83.3	117	125	8.33
503140	1201031088	15-FEB-2006 23:29	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
503146	1201031096	16-FEB-2006 21:40	DONE	119	2.3	percent	100	75.0	83.3	117	125	8.33
504921	1201035217	18-FEB-2006 21:35	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
505231	1201036006	21-FEB-2006 23:52	DONE	88	-1	percent	100	75.0	83.3	117	125	8.33
505233	1201036014	21-FEB-2006 23:52	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
505622	1201036906	22-FEB-2006 21:19	DONE	86	-2	percent	100	75.0	83.3	117	125	8.33
505914	1201037580	27-FEB-2006 22:01	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
508120	1201042931	02-MAR-2006 22:23	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
508286	1201043312	09-MAR-2006 22:56	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
511064	1201049592	14-MAR-2006 21:50	DONE	97	-0.31	percent	100	75.0	83.3	117	125	8.33
511066	1201049596	15-MAR-2006 09:16	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
509059	1201045079	17-MAR-2006 09:53	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
511985	1201051676	18-MAR-2006 15:00	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
511635	1201050916	20-MAR-2006 16:57	DONE	114	1.7	percent	100	75.0	83.3	117	125	8.33
513053	1201054072	21-MAR-2006 17:40	DONE	95	-0.65	percent	100	75.0	83.3	117	125	8.33
513052	1201054068	22-MAR-2006 12:16	DONE	98	-0.22	percent	100	75.0	83.3	117	125	8.33
513051	1201054064	23-MAR-2006 08:31	DONE	106	0.72	percent	100	75.0	83.3	117	125	8.33
514672	1201057503	25-MAR-2006 19:34	DONE	123	2.8	percent	100	75.0	83.3	117	125	8.33
513759	1201055496	27-MAR-2006 17:14	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
515263	1201058719	29-MAR-2006 22:27	DONE	113	1.6	percent	100	75.0	83.3	117	125	8.33
515264	1201058723	30-MAR-2006 09:13	DONE	96	-0.51	percent	100	75.0	83.3	117	125	8.33
515871	1201060182	31-MAR-2006 23:48	DONE	79	-2	percent	100	75.0	83.3	117	125	8.33
516132	1201060712	03-APR-2006 12:42	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
516806	1201062216	04-APR-2006 22:21	DONE	94	-0.72	percent	100	75.0	83.3	117	125	8.33
516800	1201062201	05-APR-2006 09:51	DONE	98	-0.23	percent	100	75.0	83.3	117	125	8.33
517138	1201062881	05-APR-2006 19:53	DONE	98	-0.28	percent	100	75.0	83.3	117	125	8.33
517139	1201062885	06-APR-2006 08:11	DONE	92	-0.95	percent	100	75.0	83.3	117	125	8.33
517153	1201062929	07-APR-2006 18:07	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
518029	1201064911	07-APR-2006 23:26	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
518036	1201064939	07-APR-2006 23:26	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33

Thorium-232 BLANK: Limits LCL = -.1 UCL = .1

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
509059	1201045077	16-MAR-2006 08:39	DONE	0	0.65	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
510647	1201048631	16-MAR-2006 10:55	DONE	0	1.3	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
511635	1201050914	18-MAR-2006 15:00	DUSE	0	0.49	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
511985	1201051674	18-MAR-2006 15:00	DUSE	0	-0.74	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
511630	1201050905	20-MAR-2006 07:42	DONE	0	-0.29	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
511996	1201051700	22-MAR-2006 14:23	DONE	0	-0.28	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
513053	1201054070	22-MAR-2006 19:41	DUSE	0	-0.52	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
513051	1201054062	23-MAR-2006 08:31	DUSE	0	-0.22	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
511992	1201051686	23-MAR-2006 21:21	DONE	0	0.19	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
513052	1201054066	23-MAR-2006 23:50	DUSE	0	-0.57	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03

513416	1201054856	24-MAR-2006 12:39	DONE	0	-0.82	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
514672	1201057502	25-MAR-2006 19:34	DUSE	0	0.05	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
513418	1201054864	26-MAR-2006 07:39	DONE	0	-3	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
513759	1201055494	27-MAR-2006 17:14	DUSE	0	-0.3	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
513435	1201054914	28-MAR-2006 11:41	DONE	0	1.6	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
512017	1201051748	28-MAR-2006 16:43	DONE	0	-0.4	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
514175	1201056354	29-MAR-2006 15:32	DUSE	0	2.2	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
515260	1201058709	29-MAR-2006 16:59	DONE	0	-0.48	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
515263	1201058717	29-MAR-2006 22:27	DUSE	0	-0.28	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
515264	1201058721	30-MAR-2006 09:13	DUSE	0	-0.26	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
514144	1201056273	30-MAR-2006 18:04	DONE	0	0.11	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
515871	1201060180	31-MAR-2006 23:48	DUSE	0	0.16	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
515258	1201058701	01-APR-2006 09:23	DONE	0	-2	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
515550	1201059422	02-APR-2006 07:36	DONE	0	-3	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
515556	1201059443	03-APR-2006 06:56	DUSE	0	0.06	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
516132	1201060710	03-APR-2006 12:42	DUSE	0	0.53	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
516806	1201062214	04-APR-2006 22:21	DUSE	0	-0.01	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
516800	1201062199	05-APR-2006 09:51	DUSE	0	-0.09	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
512068	1201051873	05-APR-2006 09:52	DONE	0	-0.15	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
512060	1201051841	05-APR-2006 10:05	DONE	0	1	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
517558	1201063868	05-APR-2006 15:35	DONE	0	0.35	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
517144	1201062899	05-APR-2006 15:35	DONE	0	0.89	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
515901	1201060261	05-APR-2006 19:49	DUSE	0	1.6	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
517138	1201062879	05-APR-2006 19:53	DUSE	0	-0.06	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
517139	1201062883	06-APR-2006 08:11	DUSE	0	0.17	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
516344	1201061149	06-APR-2006 13:23	DONE	0	0.81	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
517153	1201062927	07-APR-2006 18:07	DONE	0	0.3	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
518029	1201064909	07-APR-2006 23:26	DUSE	0	0.35	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03
518036	1201064937	07-APR-2006 23:26	DUSE	0	0.06	pCi/g	-0.001	-0.081	-0.055	0.05	0.08	0.03

Thorium-232 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
511710	1201051084	15-MAR-2006 13:59	DONE	3	-0.43	percent	54.7	0	-180	293	20.0	119
509059	1201045078	16-MAR-2006 08:39	DONE	78	0.19	percent	54.7	0	-180	293	20.0	119
510647	1201048632	16-MAR-2006 23:45	DONE	28	-0.22	percent	54.7	0	-180	293	20.0	119
511635	1201050915	18-MAR-2006 15:00	DUSE	1	-0.45	percent	54.7	0	-180	293	20.0	119
511985	1201051675	18-MAR-2006 15:00	DUSE	88	0.28	percent	54.7	0	-180	293	20.0	119
511630	1201050906	20-MAR-2006 07:42	DONE	45	-0.08	percent	54.7	0	-180	293	20.0	119
513052	1201054067	22-MAR-2006 12:16	DUSE	39	-0.13	percent	54.7	0	-180	293	20.0	119
511996	1201051701	22-MAR-2006 14:23	DONE	7	-0.4	percent	54.7	0	-180	293	20.0	119
513053	1201054071	22-MAR-2006 19:41	DUSE	29	-0.21	percent	54.7	0	-180	293	20.0	119
513051	1201054063	23-MAR-2006 08:31	DUSE	56	0.01	percent	54.7	0	-180	293	20.0	119
513416	1201054857	23-MAR-2006 23:50	DONE	40	-0.13	percent	54.7	0	-180	293	20.0	119
511992	1201051687	25-MAR-2006 19:34	DONE	13	-0.35	percent	54.7	0	-180	293	20.0	119
513418	1201054865	26-MAR-2006 07:39	DONE	4	-0.42	percent	54.7	0	-180	293	20.0	119
513759	1201055495	27-MAR-2006 17:14	DUSE	24	-0.26	percent	54.7	0	-180	293	20.0	119
513435	1201054915	28-MAR-2006 11:41	DONE	744	5.8	percent	54.7	0	-180	293	20.0	119
512017	1201051749	28-MAR-2006 16:43	DONE	3	-0.43	percent	54.7	0	-180	293	20.0	119
514175	1201056355	29-MAR-2006 15:32	DUSE	44	-0.09	percent	54.7	0	-180	293	20.0	119
514144	1201056274	29-MAR-2006 19:54	DONE	16	-0.33	percent	54.7	0	-180	293	20.0	119

515263	1201058718	29-MAR-2006 22:27	DUSE	155	0.84	percent	54.7	0	-180	293	20.0	119
515260	1201058710	29-MAR-2006 22:27	DONE	38	-0.14	percent	54.7	0	-180	293	20.0	119
515264	1201058722	30-MAR-2006 09:13	DUSE	17	-0.32	percent	54.7	0	-180	293	20.0	119
515258	1201058702	01-APR-2006 09:23	DONE	18	-0.31	percent	54.7	0	-180	293	20.0	119
515550	1201059423	02-APR-2006 07:36	DONE	10	-0.37	percent	54.7	0	-180	293	20.0	119
515556	1201059444	03-APR-2006 06:56	DUSE	27	-0.24	percent	54.7	0	-180	293	20.0	119
516132	1201060711	03-APR-2006 12:42	DUSE	31	-0.2	percent	54.7	0	-180	293	20.0	119
515871	1201060181	04-APR-2006 07:44	DUSE	2	-0.44	percent	54.7	0	-180	293	20.0	119
516806	1201062215	05-APR-2006 08:19	DUSE	14	-0.34	percent	54.7	0	-180	293	20.0	119
516800	1201062200	05-APR-2006 09:51	DUSE	143	0.74	percent	54.7	0	-180	293	20.0	119
512068	1201051874	05-APR-2006 09:52	DONE	35	-0.16	percent	54.7	0	-180	293	20.0	119
512060	1201051842	05-APR-2006 10:05	DONE	24	-0.26	percent	54.7	0	-180	293	20.0	119
517558	1201063869	05-APR-2006 15:35	DONE	33	-0.18	percent	54.7	0	-180	293	20.0	119
517144	1201062900	05-APR-2006 15:35	DONE	141	0.72	percent	54.7	0	-180	293	20.0	119
515901	1201060262	05-APR-2006 17:13	DUSE	27	-0.23	percent	54.7	0	-180	293	20.0	119
517138	1201062880	05-APR-2006 19:53	DUSE	20	-0.29	percent	54.7	0	-180	293	20.0	119
517139	1201062884	06-APR-2006 08:11	DUSE	30	-0.21	percent	54.7	0	-180	293	20.0	119
516344	1201061150	06-APR-2006 13:23	DONE	37	-0.15	percent	54.7	0	-180	293	20.0	119
517153	1201062928	07-APR-2006 18:07	DONE	40	-0.13	percent	54.7	0	-180	293	20.0	119
518029	1201064910	07-APR-2006 23:26	DUSE	2	-0.44	percent	54.7	0	-180	293	20.0	119
518036	1201064938	07-APR-2006 23:26	DUSE	29	-0.22	percent	54.7	0	-180	293	20.0	119

Thorium-232 LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
498910	1201021223	03-FEB-2006 12:18	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
499049	1201021535	03-FEB-2006 12:18	DONE	98	-0.26	percent	100	75.0	83.3	117	125	8.33
500715	1201025585	13-FEB-2006 16:03	DONE	114	1.7	percent	100	75.0	83.3	117	125	8.33
502831	1201030463	14-FEB-2006 20:33	DUSE	96	-0.44	percent	100	75.0	83.3	117	125	8.33
503670	1201032267	15-FEB-2006 23:29	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
503667	1201032256	16-FEB-2006 21:40	DONE	92	-0.98	percent	100	75.0	83.3	117	125	8.33
499044	1201021522	17-FEB-2006 16:17	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
505917	1201037593	27-FEB-2006 12:52	DUSE	97	-0.36	percent	100	75.0	83.3	117	125	8.33
507247	1201040735	28-FEB-2006 15:46	DONE	125	3.00	percent	100	75.0	83.3	117	125	8.33
504463	1201034136	28-FEB-2006 15:47	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
504462	1201034132	01-MAR-2006 16:22	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
504467	1201034152	01-MAR-2006 16:22	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
508044	1201042748	02-MAR-2006 22:23	DONE	114	1.7	percent	100	75.0	83.3	117	125	8.33
508046	1201042756	06-MAR-2006 20:51	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
508285	1201043299	07-MAR-2006 23:35	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
507801	1201042216	08-MAR-2006 08:59	DONE	98	-0.23	percent	100	75.0	83.3	117	125	8.33
509083	1201045144	09-MAR-2006 07:20	DONE	116	1.9	percent	100	75.0	83.3	117	125	8.33
508587	1201044004	10-MAR-2006 13:18	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
508589	1201044012	11-MAR-2006 09:34	DONE	115	1.8	percent	100	75.0	83.3	117	125	8.33
510495	1201048295	13-MAR-2006 13:51	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
510629	1201048589	13-MAR-2006 13:51	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
509832	1201046784	15-MAR-2006 09:16	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
511710	1201051086	15-MAR-2006 13:59	DONE	113	1.6	percent	100	75.0	83.3	117	125	8.33
510647	1201048634	16-MAR-2006 23:45	DONE	117	2	percent	100	75.0	83.3	117	125	8.33
511630	1201050908	20-MAR-2006 07:42	DONE	95	-0.59	percent	100	75.0	83.3	117	125	8.33
511996	1201051703	22-MAR-2006 14:23	DONE	108	0.96	percent	100	75.0	83.3	117	125	8.33

511992	1201051689	23-MAR-2006 21:21	DONE	99	-0.08	percent	100	75.0	83.3	117	125	8.33
513416	1201054859	23-MAR-2006 23:50	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
513418	1201054867	27-MAR-2006 14:43	DONE	99	-0.07	percent	100	75.0	83.3	117	125	8.33
513435	1201054917	28-MAR-2006 11:41	DONE	117	2	percent	100	75.0	83.3	117	125	8.33
514144	1201056276	29-MAR-2006 19:54	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
515260	1201058712	29-MAR-2006 22:27	DONE	115	1.8	percent	100	75.0	83.3	117	125	8.33
515258	1201058704	01-APR-2006 09:23	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
515550	1201059425	02-APR-2006 07:36	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
512068	1201051876	05-APR-2006 09:52	DONE	88	-2	percent	100	75.0	83.3	117	125	8.33
512060	1201051844	05-APR-2006 10:05	DONE	92	-0.92	percent	100	75.0	83.3	117	125	8.33
517558	1201063871	05-APR-2006 15:35	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
517144	1201062902	05-APR-2006 17:13	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
516344	1201061152	06-APR-2006 13:23	DONE	122	2.6	percent	100	75.0	83.3	117	125	8.33

Thorium-232 RER: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
511710	1201051084	15-MAR-2006 13:59	DONE	0.23	-1	num	0.91	0	-0.411	2.23	20.0	0.66
509059	1201045078	16-MAR-2006 08:39	DONE	1.76	1.3	num	0.91	0	-0.411	2.23	20.0	0.66
510647	1201048632	16-MAR-2006 23:45	DONE	0.9	-0.01	num	0.91	0	-0.411	2.23	20.0	0.66
511635	1201050915	18-MAR-2006 15:00	DUSE	0.01	-1	num	0.91	0	-0.411	2.23	20.0	0.66
511985	1201051675	18-MAR-2006 15:00	DUSE	1.84	1.4	num	0.91	0	-0.411	2.23	20.0	0.66
511630	1201050906	20-MAR-2006 07:42	DONE	0.64	-0.41	num	0.91	0	-0.411	2.23	20.0	0.66
513052	1201054067	22-MAR-2006 12:16	DUSE	1.06	0.22	num	0.91	0	-0.411	2.23	20.0	0.66
511996	1201051701	22-MAR-2006 14:23	DONE	0.31	-0.9	num	0.91	0	-0.411	2.23	20.0	0.66
513053	1201054071	22-MAR-2006 19:41	DUSE	0.59	-0.48	num	0.91	0	-0.411	2.23	20.0	0.66
513051	1201054063	23-MAR-2006 08:31	DUSE	1.65	1.1	num	0.91	0	-0.411	2.23	20.0	0.66
513416	1201054857	23-MAR-2006 23:50	DONE	0.82	-0.13	num	0.91	0	-0.411	2.23	20.0	0.66
511992	1201051687	25-MAR-2006 19:34	DONE	0.42	-0.74	num	0.91	0	-0.411	2.23	20.0	0.66
513418	1201054865	26-MAR-2006 07:39	DONE	0.09	-1	num	0.91	0	-0.411	2.23	20.0	0.66
513759	1201055495	27-MAR-2006 17:14	DUSE	0.31	-0.91	num	0.91	0	-0.411	2.23	20.0	0.66
513435	1201054915	28-MAR-2006 11:41	DONE	1.7	1.2	num	0.91	0	-0.411	2.23	20.0	0.66
512017	1201051749	28-MAR-2006 16:43	DONE	0.08	-1	num	0.91	0	-0.411	2.23	20.0	0.66
514175	1201056355	29-MAR-2006 15:32	DUSE	1.81	1.4	num	0.91	0	-0.411	2.23	20.0	0.66
514144	1201056274	29-MAR-2006 19:54	DONE	0.47	-0.67	num	0.91	0	-0.411	2.23	20.0	0.66
515263	1201058718	29-MAR-2006 22:27	DUSE	1.88	1.5	num	0.91	0	-0.411	2.23	20.0	0.66
515260	1201058710	29-MAR-2006 22:27	DONE	0.48	-0.64	num	0.91	0	-0.411	2.23	20.0	0.66
515264	1201058722	30-MAR-2006 09:13	DUSE	0.24	-1	num	0.91	0	-0.411	2.23	20.0	0.66
515258	1201058702	01-APR-2006 09:23	DONE	0.61	-0.45	num	0.91	0	-0.411	2.23	20.0	0.66
515550	1201059423	02-APR-2006 07:36	DONE	0.7	-0.31	num	0.91	0	-0.411	2.23	20.0	0.66
515556	1201059444	03-APR-2006 06:56	DUSE	0.91	0.01	num	0.91	0	-0.411	2.23	20.0	0.66
516132	1201060711	03-APR-2006 12:42	DUSE	1.08	0.26	num	0.91	0	-0.411	2.23	20.0	0.66
515871	1201060181	04-APR-2006 07:44	DUSE	0.09	-1	num	0.91	0	-0.411	2.23	20.0	0.66
516806	1201062215	05-APR-2006 08:19	DUSE	0.46	-0.68	num	0.91	0	-0.411	2.23	20.0	0.66
516800	1201062200	05-APR-2006 09:51	DUSE	2.31	2.1	num	0.91	0	-0.411	2.23	20.0	0.66
512068	1201051874	05-APR-2006 09:52	DONE	1.48	0.87	num	0.91	0	-0.411	2.23	20.0	0.66
512060	1201051842	05-APR-2006 10:05	DONE	0.65	-0.39	num	0.91	0	-0.411	2.23	20.0	0.66
517558	1201063869	05-APR-2006 15:35	DONE	1.01	0.15	num	0.91	0	-0.411	2.23	20.0	0.66
517144	1201062900	05-APR-2006 15:35	DONE	2.43	2.3	num	0.91	0	-0.411	2.23	20.0	0.66
515901	1201060262	05-APR-2006 17:13	DUSE	1.04	0.2	num	0.91	0	-0.411	2.23	20.0	0.66
517138	1201062880	05-APR-2006 19:53	DUSE	0.76	-0.22	num	0.91	0	-0.411	2.23	20.0	0.66

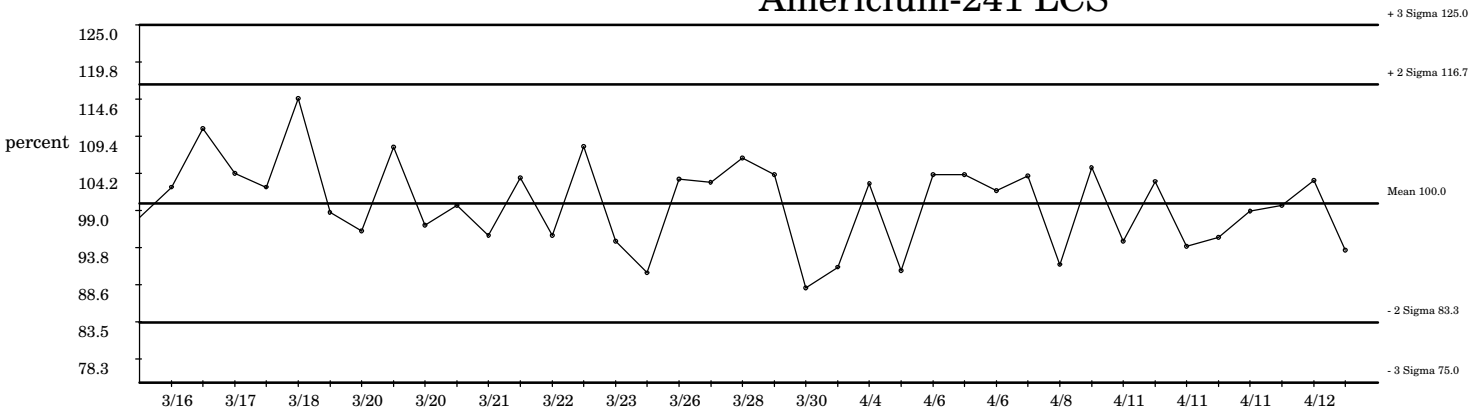
517139	1201062884	06-APR-2006 08:11	DUSE	1.13	0.34	num	0.91	0	-0.411	2.23	20.0	0.66
516344	1201061150	06-APR-2006 13:23	DONE	1.21	0.46	num	0.91	0	-0.411	2.23	20.0	0.66
517153	1201062928	07-APR-2006 18:07	DONE	1.71	1.2	num	0.91	0	-0.411	2.23	20.0	0.66
518029	1201064910	07-APR-2006 23:26	DUSE	0.07	-1	num	0.91	0	-0.411	2.23	20.0	0.66
518036	1201064938	07-APR-2006 23:26	DUSE	0.47	-0.66	num	0.91	0	-0.411	2.23	20.0	0.66

Thorium-232 SPIKE: Limits LCL = 75 UCL = 125

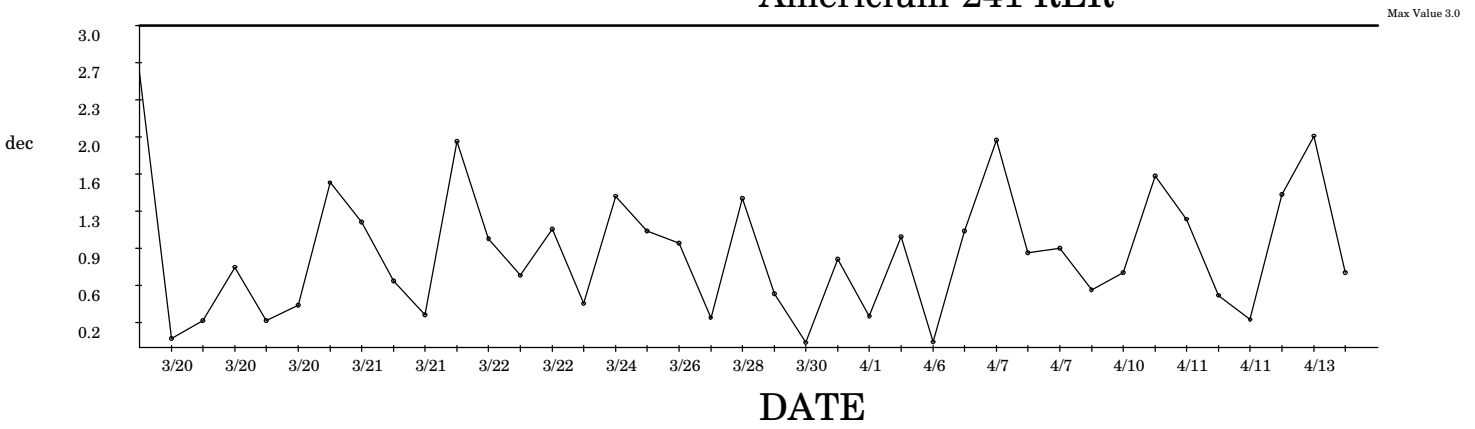
Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
499692	1201023012	02-FEB-2006 21:07	DONE	113	1.6	percent	100	75.0	83.3	117	125	8.33
498910	1201021222	03-FEB-2006 12:18	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
499049	1201021534	03-FEB-2006 12:18	DONE	133	4	percent	100	75.0	83.3	117	125	8.33
500715	1201025584	13-FEB-2006 16:03	DONE	95	-0.6	percent	100	75.0	83.3	117	125	8.33
502831	1201030462	14-FEB-2006 20:33	DUSE	101	0.12	percent	100	75.0	83.3	117	125	8.33
503670	1201032266	15-FEB-2006 23:29	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
503667	1201032255	16-FEB-2006 21:41	DONE	106	0.72	percent	100	75.0	83.3	117	125	8.33
499044	1201021521	17-FEB-2006 16:17	DONE	121	2.5	percent	100	75.0	83.3	117	125	8.33
505917	1201037592	27-FEB-2006 12:52	DUSE	101	0.12	percent	100	75.0	83.3	117	125	8.33
507247	1201040734	28-FEB-2006 15:46	DONE	119	2.3	percent	100	75.0	83.3	117	125	8.33
504463	1201034135	28-FEB-2006 15:47	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
504462	1201034131	01-MAR-2006 16:22	DONE	99	-0.08	percent	100	75.0	83.3	117	125	8.33
504467	1201034151	01-MAR-2006 16:22	DONE	95	-0.61	percent	100	75.0	83.3	117	125	8.33
508044	1201042747	02-MAR-2006 22:23	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
508046	1201042755	04-MAR-2006 21:34	DONE	125	3.00	percent	100	75.0	83.3	117	125	8.33
508285	1201043303	07-MAR-2006 23:35	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
507801	1201042215	08-MAR-2006 08:59	DONE	78	-3	percent	100	75.0	83.3	117	125	8.33
509083	1201045143	08-MAR-2006 16:39	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
508587	1201044003	09-MAR-2006 13:56	DONE	112	1.4	percent	100	75.0	83.3	117	125	8.33
508589	1201044011	09-MAR-2006 16:01	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
510495	1201048294	13-MAR-2006 13:51	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
510629	1201048588	13-MAR-2006 13:51	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
509832	1201046783	15-MAR-2006 09:16	DONE	94	-0.67	percent	100	75.0	83.3	117	125	8.33
511710	1201051085	15-MAR-2006 13:59	DONE	114	1.7	percent	100	75.0	83.3	117	125	8.33
510647	1201048633	16-MAR-2006 23:45	DONE	106	0.72	percent	100	75.0	83.3	117	125	8.33
511630	1201050907	20-MAR-2006 07:42	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
511996	1201051702	22-MAR-2006 14:23	DONE	119	2.3	percent	100	75.0	83.3	117	125	8.33
511992	1201051688	23-MAR-2006 21:21	DONE	125	3	percent	100	75.0	83.3	117	125	8.33
513416	1201054858	23-MAR-2006 23:50	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
513418	1201054866	26-MAR-2006 07:39	DONE	112	1.4	percent	100	75.0	83.3	117	125	8.33
514144	1201056275	29-MAR-2006 19:54	DONE	115	1.8	percent	100	75.0	83.3	117	125	8.33
515260	1201058711	29-MAR-2006 22:27	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
515258	1201058703	01-APR-2006 09:23	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
515550	1201059424	02-APR-2006 07:36	DONE	100	0	percent	100	75.0	83.3	117	125	8.33
512068	1201051875	05-APR-2006 09:52	DONE	88	-2	percent	100	75.0	83.3	117	125	8.33
512060	1201051843	05-APR-2006 10:05	DONE	99	-0.11	percent	100	75.0	83.3	117	125	8.33
517558	1201063870	05-APR-2006 15:35	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
516344	1201061151	06-APR-2006 13:23	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
517144	1201062901	07-APR-2006 13:44	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33

SPC Graph for Gamma Spec in Solids 4/13/2006

Americium-241 LCS



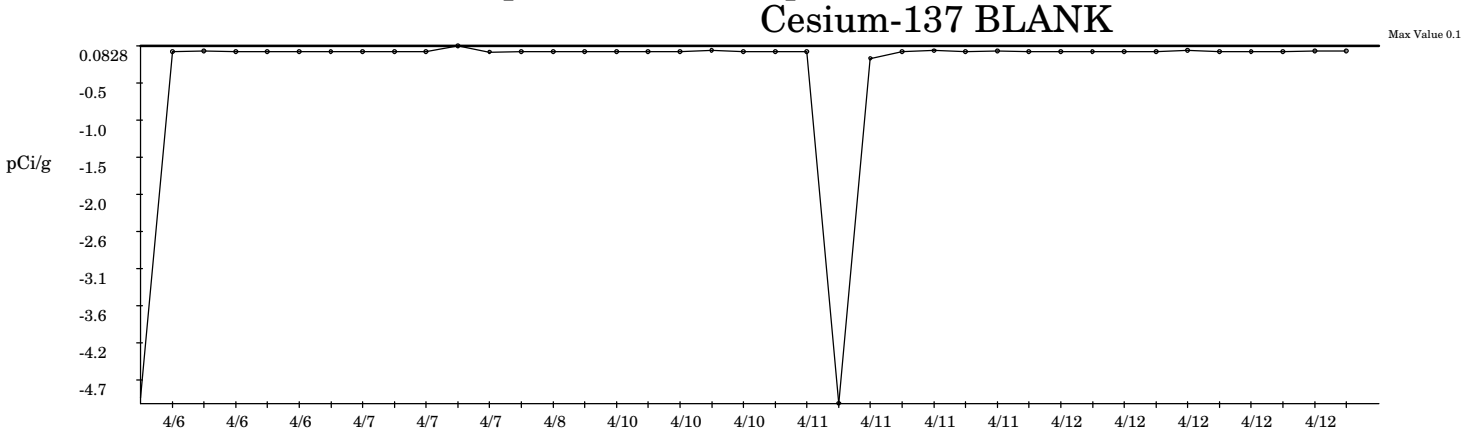
Americium-241 RER



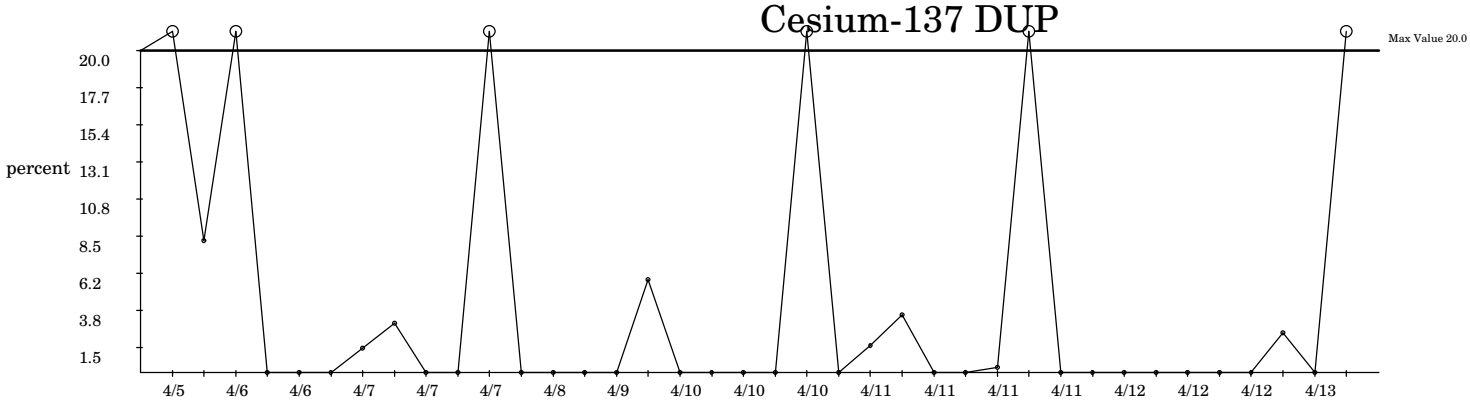
○ Denotes Outlier

SPC Graph for Gamma Spec in Solids 4/13/2006

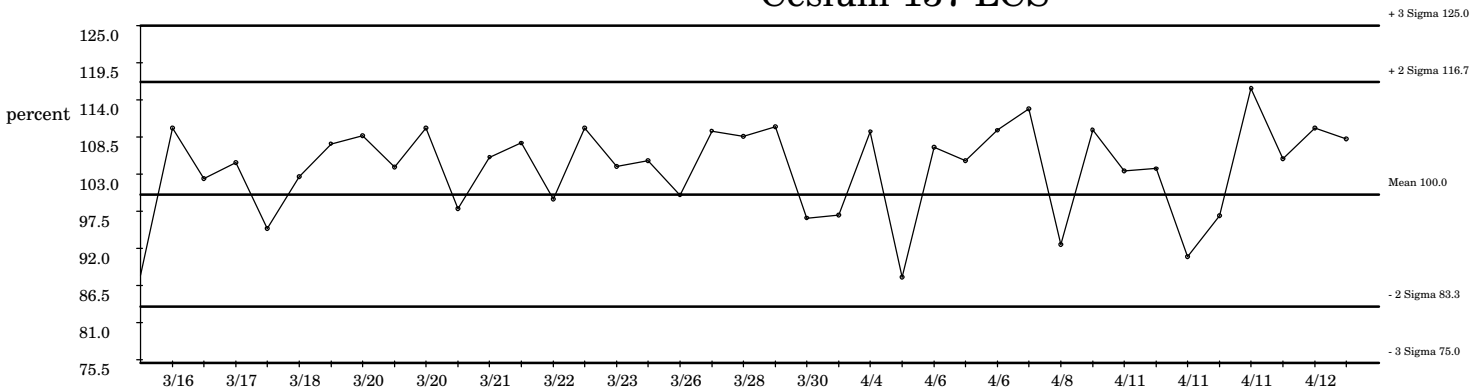
Cesium-137 BLANK



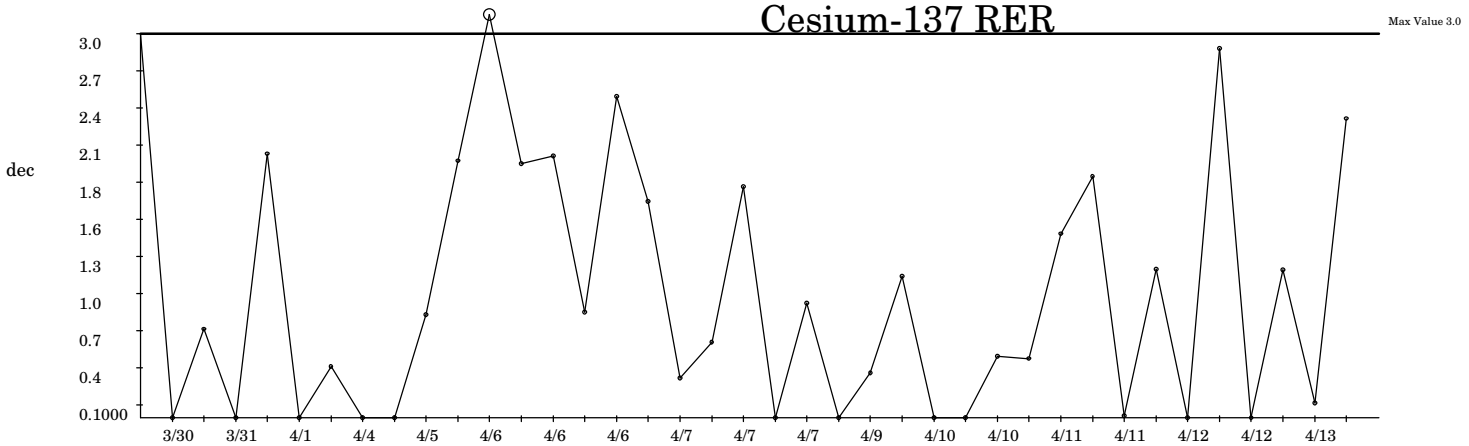
Cesium-137 DUP



Cesium-137 LCS



Cesium-137 RER



○ Denotes Outlier

SPC Graph for Gamma Spec in Solids 4/13/2006

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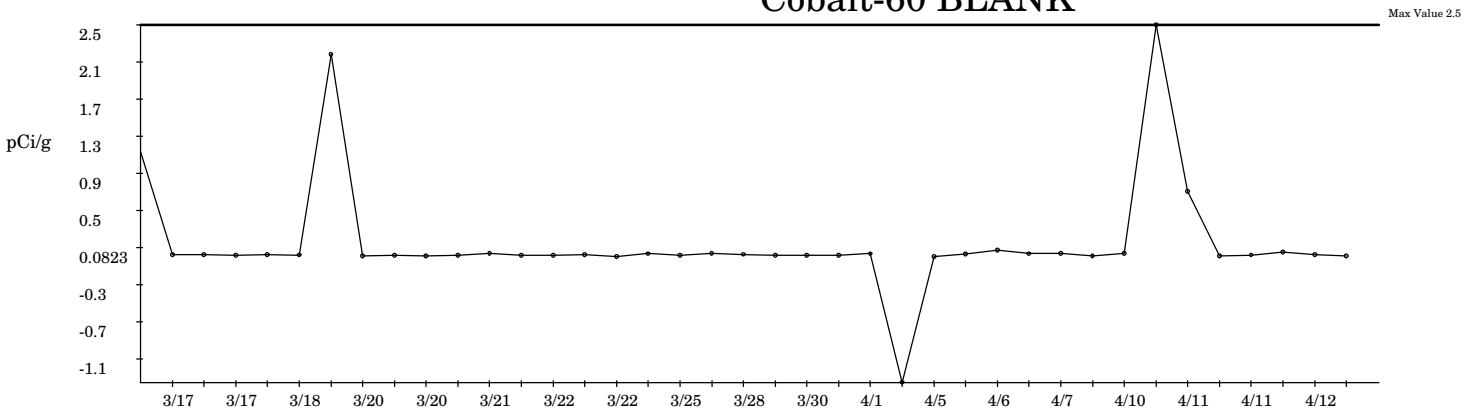

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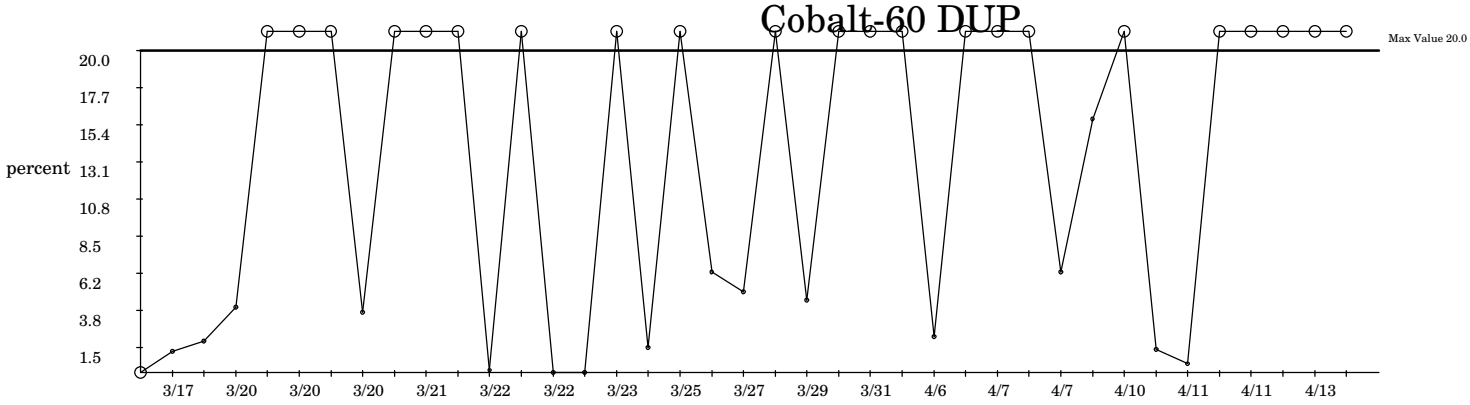

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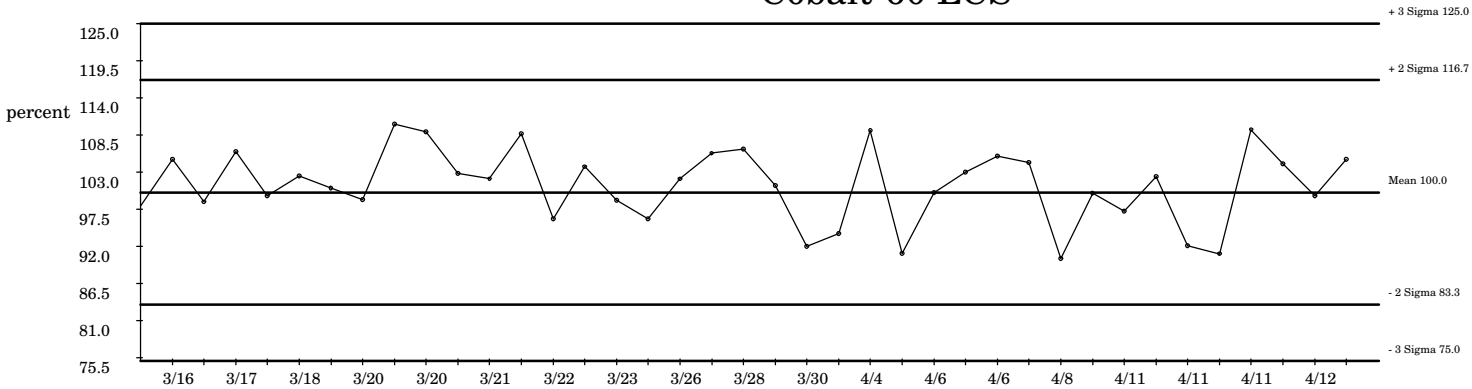

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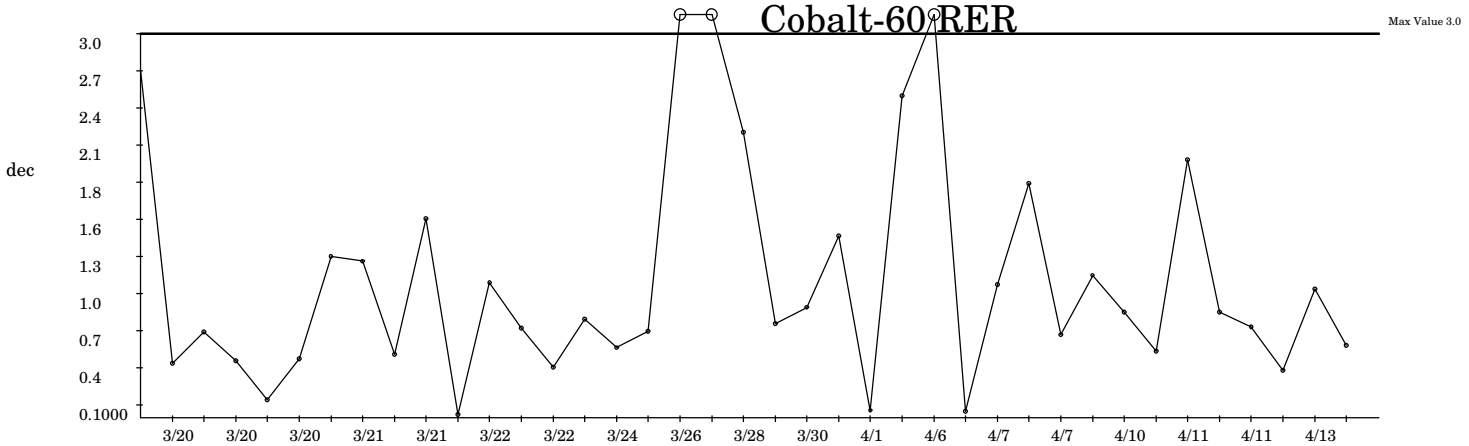
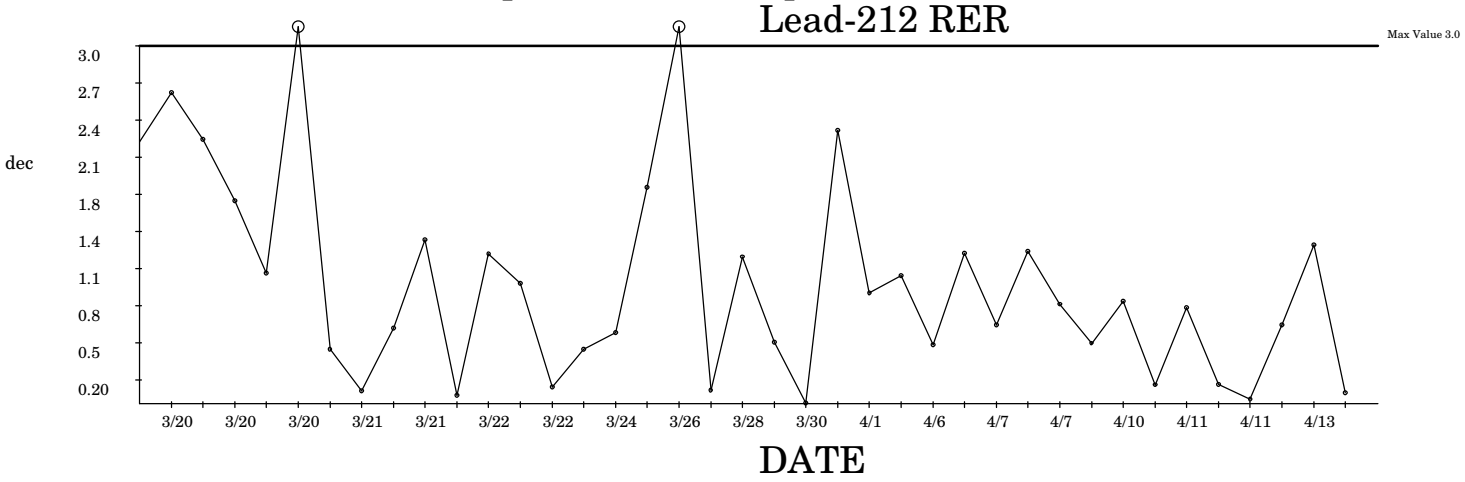


○ Denotes Outlier

SPC Graph for Gamma Spec in Solids 4/13/2006
Lead-212 RER



○ Denotes Outlier

SPC Graph for Gamma Spec in Solids 4/13/2006

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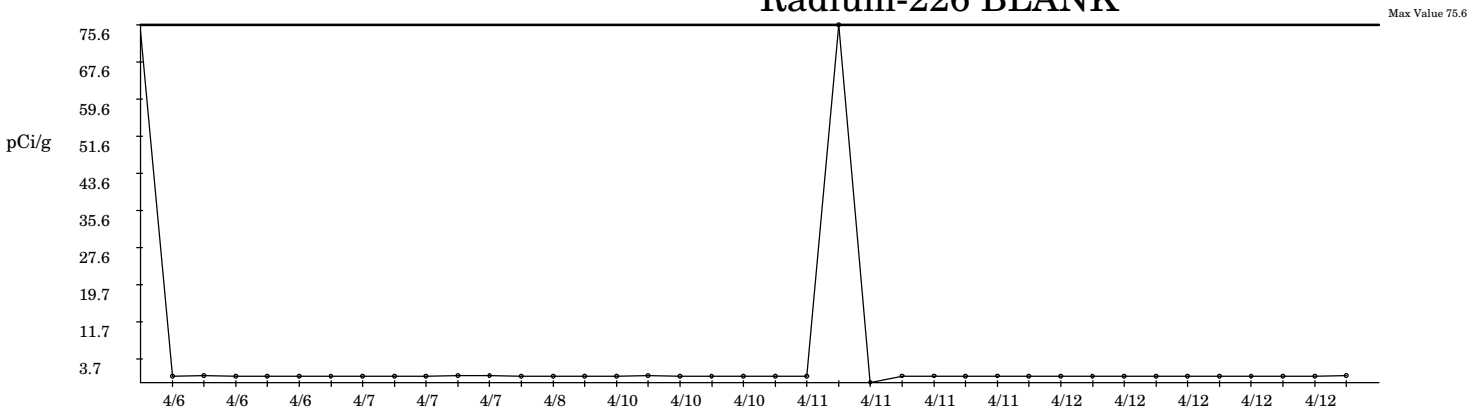
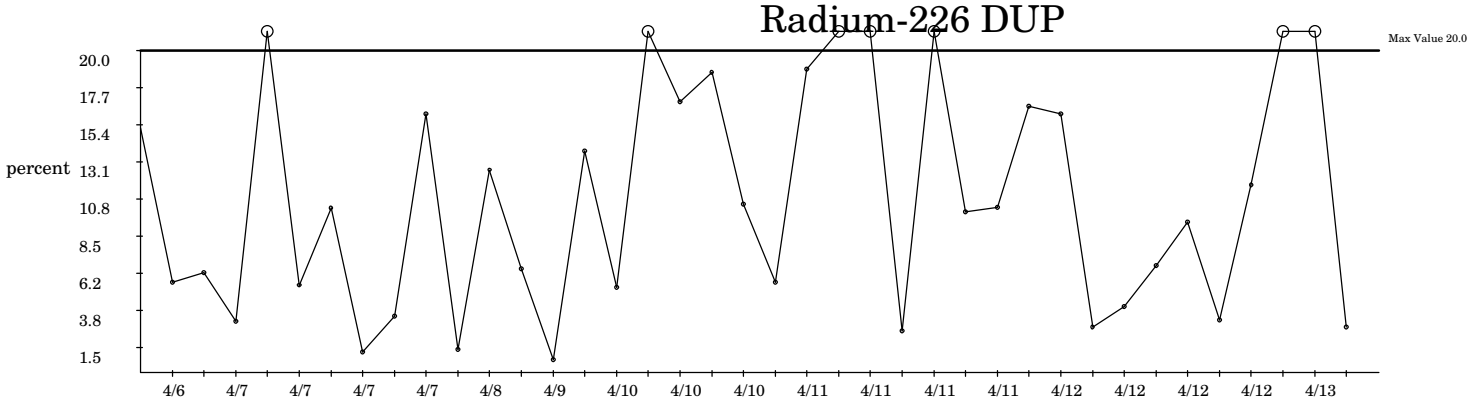
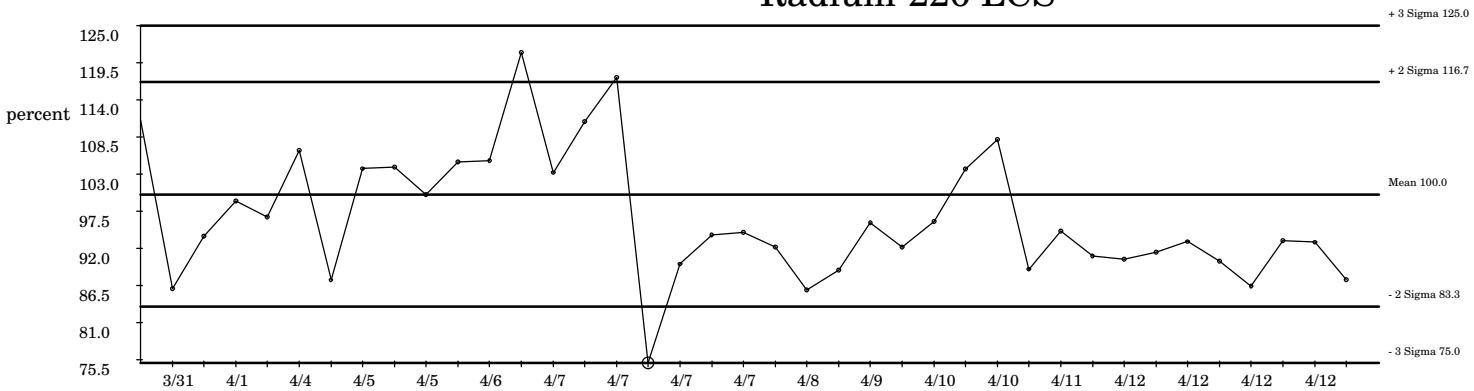


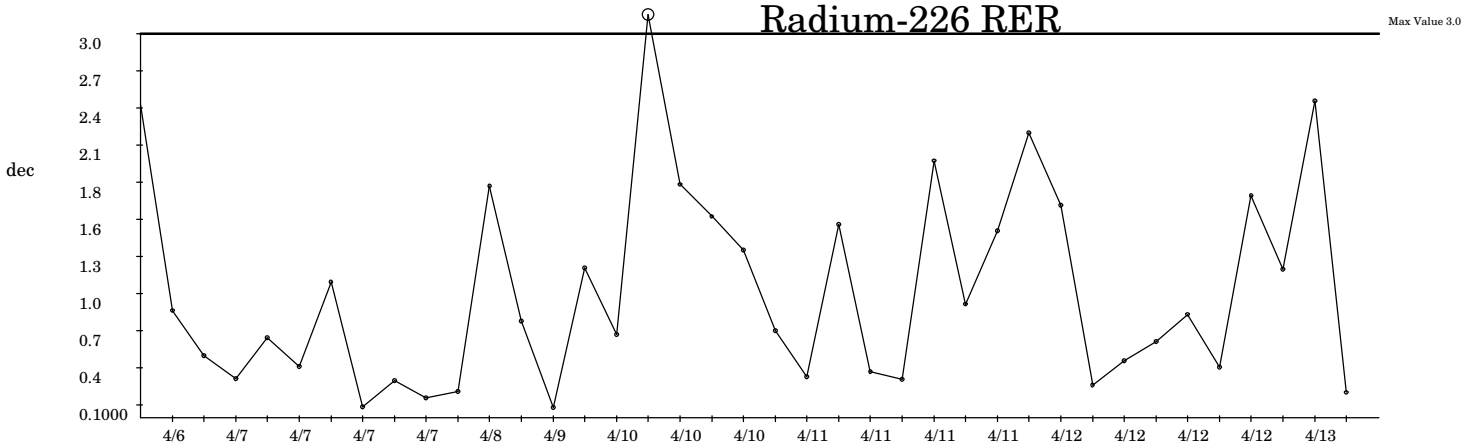
Radium-226 DUP



Radium-226 LCS



Radium-226 RER



○ Denotes Outlier

SPC Graph for Gamma Spec in Solids 4/13/2006

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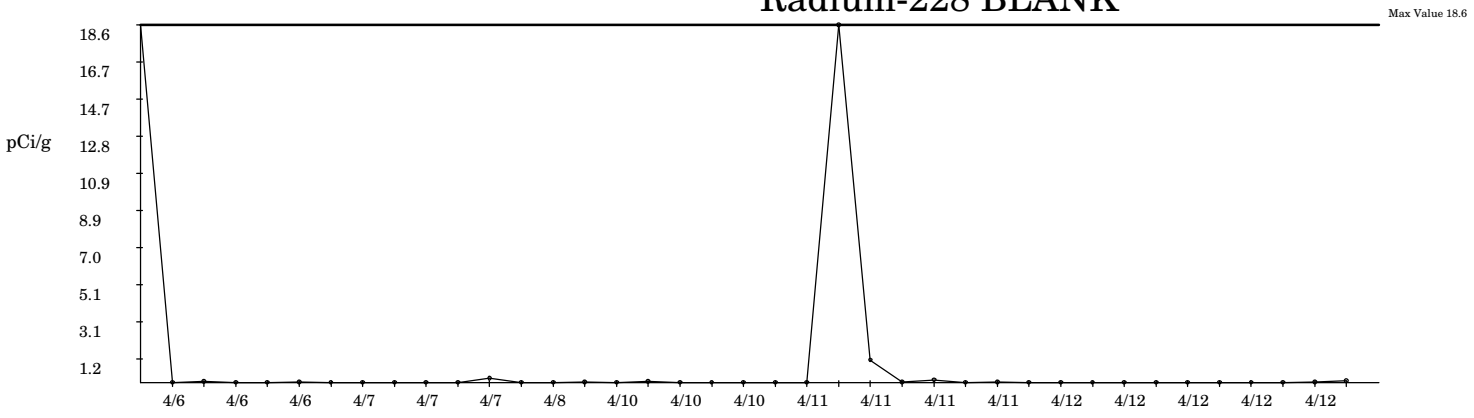

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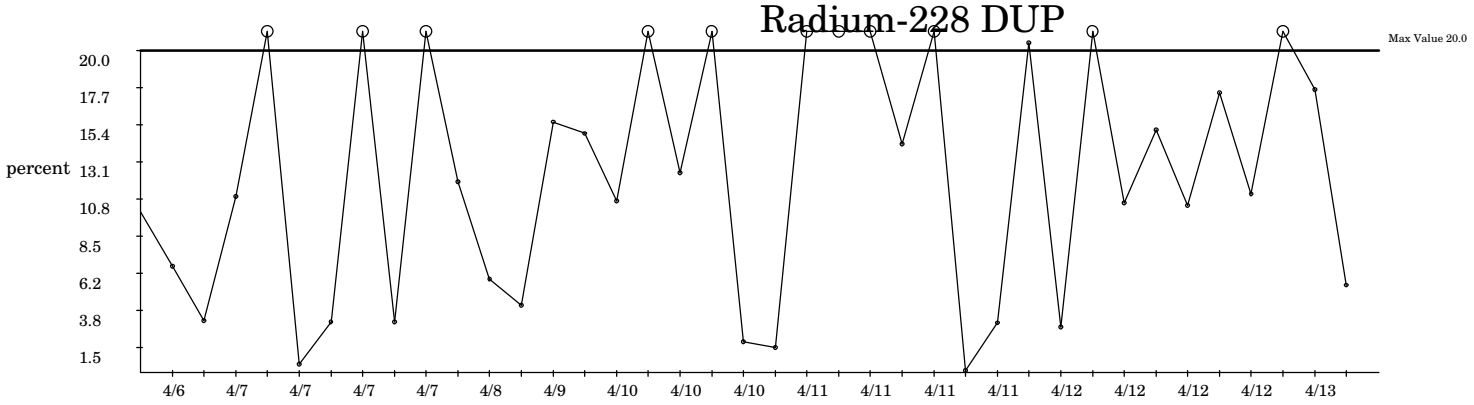

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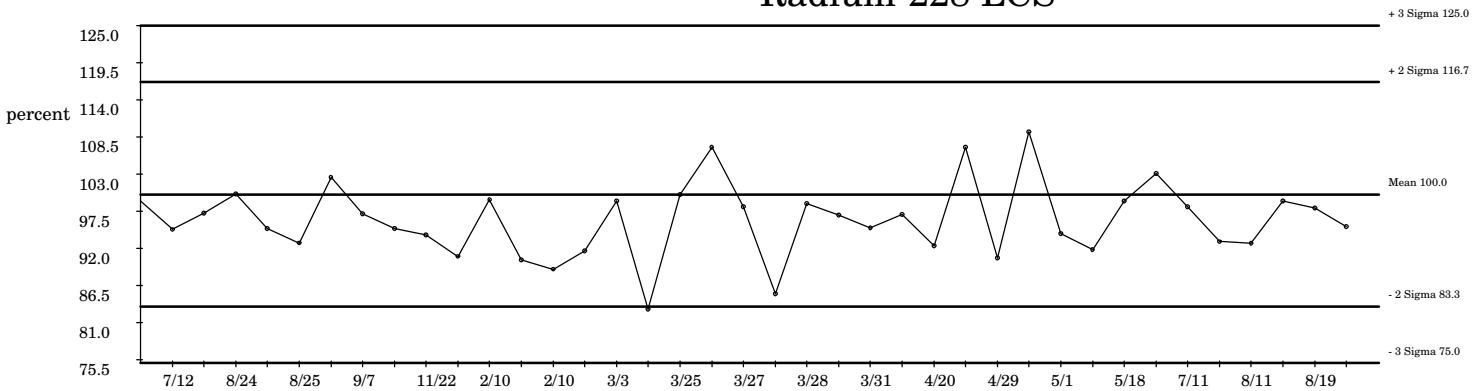

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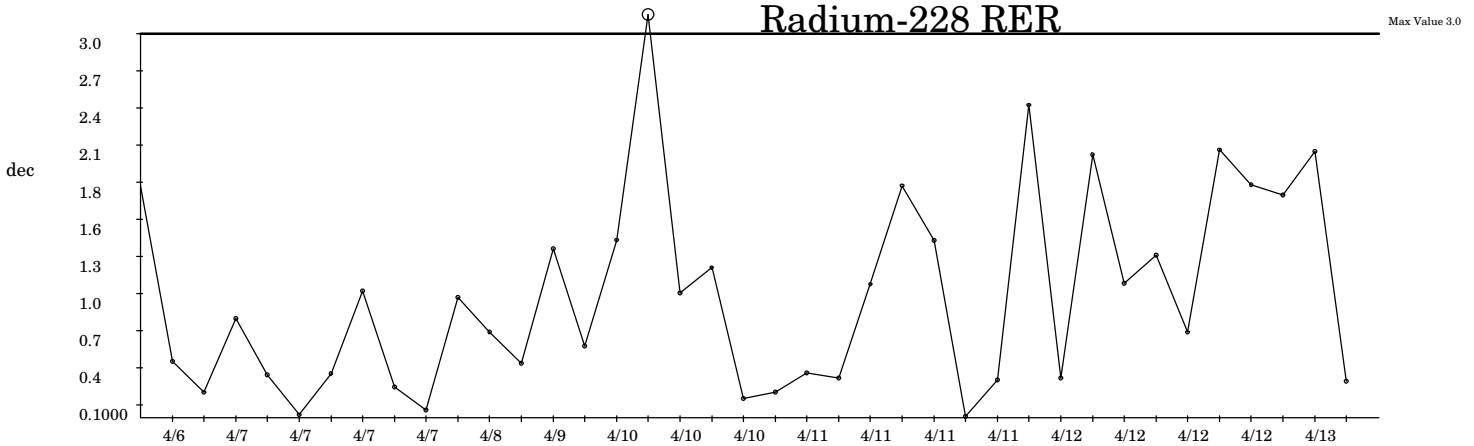


○ Denotes Outlier

Data used for Gamma Spec in Solids 14-APR-2006

Americium-241LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
507629	1201041705	16-MAR-2006 13:15	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
507626	1201041699	16-MAR-2006 15:21	DONE	102	0.28	percent	100	75.0	83.3	117	125	8.33
507622	1201041689	17-MAR-2006 06:12	DUSE	111	1.3	percent	100	75.0	83.3	117	125	8.33
508637	1201044145	17-MAR-2006 07:42	DONE	104	0.5	percent	100	75.0	83.3	117	125	8.33
508605	1201044043	17-MAR-2006 09:19	DONE	102	0.28	percent	100	75.0	83.3	117	125	8.33
505207	1201035926	18-MAR-2006 13:44	DONE	115	1.8	percent	100	75.0	83.3	117	125	8.33
512599	1201053131	20-MAR-2006 06:21	DONE	98.8	-0.15	percent	100	75.0	83.3	117	125	8.33
512597	1201053125	20-MAR-2006 07:29	DONE	96.2	-0.46	percent	100	75.0	83.3	117	125	8.33
508903	1201044758	20-MAR-2006 14:37	DONE	108	0.95	percent	100	75.0	83.3	117	125	8.33
499544	1201022693	20-MAR-2006 19:52	DONE	97	-0.36	percent	100	75.0	83.3	117	125	8.33
512598	1201053128	20-MAR-2006 20:59	DONE	99.7	-0.04	percent	100	75.0	83.3	117	125	8.33
506206	1201055202	21-MAR-2006 17:35	DONE	95.6	-0.53	percent	100	75.0	83.3	117	125	8.33
509439	1201046013	22-MAR-2006 17:38	DUSE	104	0.43	percent	100	75.0	83.3	117	125	8.33
509445	1201046017	22-MAR-2006 17:56	DUSE	95.5	-0.54	percent	100	75.0	83.3	117	125	8.33
509577	1201046236	22-MAR-2006 22:50	DUSE	108	0.96	percent	100	75.0	83.3	117	125	8.33
509449	1201046024	23-MAR-2006 12:45	DUSE	94.7	-0.64	percent	100	75.0	83.3	117	125	8.33
509579	1201046243	25-MAR-2006 14:21	DUSE	90.3	-1	percent	100	75.0	83.3	117	125	8.33
498915	1201021245	26-MAR-2006 20:50	DUSE	103	0.41	percent	100	75.0	83.3	117	125	8.33
513814	1201055632	28-MAR-2006 04:36	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
513815	1201055635	28-MAR-2006 20:48	DONE	106	0.77	percent	100	75.0	83.3	117	125	8.33
512778	1201053531	30-MAR-2006 09:25	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
514959	1201058063	30-MAR-2006 14:51	DUSE	88.2	-1	percent	100	75.0	83.3	117	125	8.33
513797	1201055598	31-MAR-2006 06:06	DONE	91.1	-1	percent	100	75.0	83.3	117	125	8.33
512787	1201053543	04-APR-2006 09:03	DONE	103	0.34	percent	100	75.0	83.3	117	125	8.33
516236	1201060950	05-APR-2006 06:02	DUSE	90.6	-1	percent	100	75.0	83.3	117	125	8.33
513810	1201055629	06-APR-2006 08:46	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
517045	1201062678	06-APR-2006 11:31	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
517980	1201064811	06-APR-2006 12:37	DONE	102	0.22	percent	100	75.0	83.3	117	125	8.33
517983	1201064814	07-APR-2006 06:28	DONE	104	0.47	percent	100	75.0	83.3	117	125	8.33
513432	1201054907	08-APR-2006 20:51	DONE	91.5	-1	percent	100	75.0	83.3	117	125	8.33
513162	1201054361	09-APR-2006 21:18	DONE	105	0.61	percent	100	75.0	83.3	117	125	8.33
519008	1201067118	11-APR-2006 13:11	DUSE	94.7	-0.63	percent	100	75.0	83.3	117	125	8.33
513802	1201055609	11-APR-2006 14:31	DONE	103	0.37	percent	100	75.0	83.3	117	125	8.33
519499	1201068200	11-APR-2006 17:47	DUSE	94	-0.72	percent	100	75.0	83.3	117	125	8.33
520032	1201069387	11-APR-2006 18:57	DONE	95.3	-0.56	percent	100	75.0	83.3	117	125	8.33
518359	1201065661	11-APR-2006 20:04	DONE	98.9	-0.13	percent	100	75.0	83.3	117	125	8.33
513799	1201055605	12-APR-2006 12:22	DONE	99.7	-0.04	percent	100	75.0	83.3	117	125	8.33
519409	1201067938	12-APR-2006 22:07	DONE	103	0.38	percent	100	75.0	83.3	117	125	8.33
513807	1201055622	13-APR-2006 18:53	DONE	93.5	-0.78	percent	100	75.0	83.3	117	125	8.33

Americium-241RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
508637	1201044144	17-MAR-2006 10:33	DONE	0.44	-0.73	dec	0.83	0	-0.242	1.91	3.00	0.54
498916	1201021255	20-MAR-2006 01:43	DUSE	0.08	-1	dec	0.83	0	-0.242	1.91	3.00	0.54
498916	1201021256	20-MAR-2006 01:43	DUSE	0.25	-1	dec	0.83	0	-0.242	1.91	3.00	0.54
512599	1201053130	20-MAR-2006 10:07	DONE	0.75	-0.16	dec	0.83	0	-0.242	1.91	3.00	0.54
508903	1201044757	20-MAR-2006 14:36	DONE	0.25	-1	dec	0.83	0	-0.242	1.91	3.00	0.54
505207	1201035925	20-MAR-2006 20:56	DONE	0.39	-0.82	dec	0.83	0	-0.242	1.91	3.00	0.54
512597	1201053124	20-MAR-2006 22:02	DONE	1.54	1.3	dec	0.83	0	-0.242	1.91	3.00	0.54
499544	1201022691	21-MAR-2006 05:31	DONE	1.17	0.63	dec	0.83	0	-0.242	1.91	3.00	0.54
512598	1201053127	21-MAR-2006 10:48	DONE	0.62	-0.39	dec	0.83	0	-0.242	1.91	3.00	0.54
506206	1201055201	21-MAR-2006 19:40	DONE	0.3	-0.98	dec	0.83	0	-0.242	1.91	3.00	0.54
498916	1201021257	22-MAR-2006 05:44	DUSE	1.92	2	dec	0.83	0	-0.242	1.91	3.00	0.54
509445	1201046016	22-MAR-2006 18:51	DUSE	1.01	0.33	dec	0.83	0	-0.242	1.91	3.00	0.54
509439	1201046012	22-MAR-2006 20:39	DUSE	0.67	-0.3	dec	0.83	0	-0.242	1.91	3.00	0.54
509577	1201046235	22-MAR-2006 22:31	DUSE	1.1	0.5	dec	0.83	0	-0.242	1.91	3.00	0.54
509449	1201046023	23-MAR-2006 05:27	DUSE	0.41	-0.79	dec	0.83	0	-0.242	1.91	3.00	0.54
498915	1201021243	24-MAR-2006 16:26	DUSE	1.41	1.1	dec	0.83	0	-0.242	1.91	3.00	0.54
509579	1201046242	25-MAR-2006 12:07	DUSE	1.08	0.47	dec	0.83	0	-0.242	1.91	3.00	0.54
498915	1201021246	26-MAR-2006 23:53	DUSE	0.97	0.26	dec	0.83	0	-0.242	1.91	3.00	0.54
513814	1201055631	27-MAR-2006 23:07	DONE	0.28	-1	dec	0.83	0	-0.242	1.91	3.00	0.54
513815	1201055634	28-MAR-2006 20:48	DONE	1.39	1	dec	0.83	0	-0.242	1.91	3.00	0.54
514959	1201058061	29-MAR-2006 12:17	DUSE	0.5	-0.62	dec	0.83	0	-0.242	1.91	3.00	0.54
512778	1201053530	30-MAR-2006 14:52	DONE	0.04	-1	dec	0.83	0	-0.242	1.91	3.00	0.54
513797	1201055597	31-MAR-2006 06:04	DONE	0.82	-0.02	dec	0.83	0	-0.242	1.91	3.00	0.54
512787	1201053542	01-APR-2006 20:06	DONE	0.29	-1	dec	0.83	0	-0.242	1.91	3.00	0.54
517045	1201062677	05-APR-2006 22:28	DONE	1.03	0.37	dec	0.83	0	-0.242	1.91	3.00	0.54
516236	1201060949	06-APR-2006 06:01	DUSE	0.05	-1	dec	0.83	0	-0.242	1.91	3.00	0.54
513810	1201055628	06-APR-2006 10:52	DONE	1.09	0.47	dec	0.83	0	-0.242	1.91	3.00	0.54
517980	1201064809	07-APR-2006 06:16	DONE	1.93	2.1	dec	0.83	0	-0.242	1.91	3.00	0.54
517983	1201064813	07-APR-2006 06:28	DONE	0.88	0.1	dec	0.83	0	-0.242	1.91	3.00	0.54
513432	1201054906	07-APR-2006 21:54	DONE	0.92	0.17	dec	0.83	0	-0.242	1.91	3.00	0.54
513162	1201054360	09-APR-2006 21:34	DONE	0.53	-0.56	dec	0.83	0	-0.242	1.91	3.00	0.54
513799	1201055604	10-APR-2006 15:42	DUSE	0.7	-0.25	dec	0.83	0	-0.242	1.91	3.00	0.54
519499	1201068199	11-APR-2006 16:44	DUSE	1.6	1.4	dec	0.83	0	-0.242	1.91	3.00	0.54
520032	1201069386	11-APR-2006 18:59	DONE	1.19	0.67	dec	0.83	0	-0.242	1.91	3.00	0.54
519008	1201067117	11-APR-2006 19:22	DUSE	0.49	-0.65	dec	0.83	0	-0.242	1.91	3.00	0.54
518359	1201065660	11-APR-2006 21:47	DUSE	0.26	-1	dec	0.83	0	-0.242	1.91	3.00	0.54
513802	1201055608	11-APR-2006 23:19	DUSE	1.42	1.1	dec	0.83	0	-0.242	1.91	3.00	0.54
519409	1201067936	13-APR-2006 05:51	DONE	1.97	2.1	dec	0.83	0	-0.242	1.91	3.00	0.54
513807	1201055621	14-APR-2006 08:48	DUSE	0.7	-0.25	dec	0.83	0	-0.242	1.91	3.00	0.54

Cesium-137BLANK: Limits LCL = -2.6 UCL = 2.3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
513810	1201055627	06-APR-2006 09:43	DONE	00	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
516987	1201062548	06-APR-2006 10:43	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
517045	1201062676	06-APR-2006 10:56	DONE	0.01	0.17	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
516991	1201062560	06-APR-2006 11:51	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
516993	1201062566	06-APR-2006 16:35	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
510982	1201049354	06-APR-2006 16:39	DONE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
510976	1201049346	06-APR-2006 18:46	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
516996	1201062572	07-APR-2006 06:08	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
516999	1201062578	07-APR-2006 08:19	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
511760	1201051194	07-APR-2006 10:19	DONE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
517980	1201064808	07-APR-2006 14:52	DONE	0.08	0.26	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
513432	1201054905	07-APR-2006 17:03	DONE	-0.007	0.15	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
517004	1201062584	08-APR-2006 16:03	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
517006	1201062590	08-APR-2006 21:37	DONE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
517018	1201062614	09-APR-2006 21:09	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
517011	1201062602	10-APR-2006 06:23	DONE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
513162	1201054359	10-APR-2006 06:36	DONE	00	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
517009	1201062596	10-APR-2006 10:47	DONE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
513799	1201055603	10-APR-2006 11:17	DUSE	0.02	0.18	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
517015	1201062608	10-APR-2006 13:00	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
512595	1201053117	10-APR-2006 13:17	DONE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
513054	1201054080	11-APR-2006 11:51	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
519499	1201068198	11-APR-2006 14:26	DONE	-5	-6	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
520032	1201069385	11-APR-2006 16:52	DONE	-0.099	0.04	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
519008	1201067116	11-APR-2006 18:52	DONE	00	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
518359	1201065659	11-APR-2006 18:53	DONE	0.01	0.17	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
513058	1201054086	11-APR-2006 21:43	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
513802	1201055607	11-APR-2006 23:19	DUSE	0.01	0.17	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
513780	1201055549	11-APR-2006 23:45	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
518318	1201065555	12-APR-2006 06:20	DONE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
518323	1201065568	12-APR-2006 08:23	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
518333	1201065590	12-APR-2006 08:31	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
518327	1201065574	12-APR-2006 10:50	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
513070	1201054128	12-APR-2006 13:11	DUSE	0.02	0.18	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
513066	1201054110	12-APR-2006 13:14	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
513116	1201054236	12-APR-2006 16:57	DONE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
518338	1201065599	12-APR-2006 17:42	DUSE	0	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
519409	1201067935	12-APR-2006 22:06	DONE	00	0.16	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81
513807	1201055620	14-APR-2006 06:29	DUSE	0.01	0.17	pCi/g	-0.128	-2.6	-1.7	1.49	2.3	0.81

Cesium-137DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
508900	1201044748	05-APR-2006 17:36	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
517045	1201062677	05-APR-2006 22:28	DONE	31.2	-0.16	percent	172	0	-1600	1970	20.0	897
516236	1201060949	06-APR-2006 06:01	DONE	8.19	-0.18	percent	172	0	-1600	1970	20.0	897
513810	1201055628	06-APR-2006 10:52	DONE	248	0.08	percent	172	0	-1600	1970	20.0	897
516991	1201062561	06-APR-2006 12:45	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
516993	1201062567	06-APR-2006 16:35	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
516996	1201062573	07-APR-2006 06:09	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
517980	1201064809	07-APR-2006 06:16	DONE	1.51	-0.19	percent	172	0	-1600	1970	20.0	897
517983	1201064813	07-APR-2006 06:28	DONE	3.07	-0.19	percent	172	0	-1600	1970	20.0	897
511760	1201051195	07-APR-2006 10:20	DONE	0	-0.19	percent	172	0	-1600	1970	20.0	897
516996	1201062573	07-APR-2006 10:31	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
513432	1201054906	07-APR-2006 21:54	DONE	359	0.21	percent	172	0	-1600	1970	20.0	897
510976	1201049347	07-APR-2006 22:28	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
517004	1201062585	08-APR-2006 16:02	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
517006	1201062591	08-APR-2006 21:38	DONE	0	-0.19	percent	172	0	-1600	1970	20.0	897
517018	1201062615	09-APR-2006 21:10	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
513162	1201054360	09-APR-2006 21:34	DONE	5.74	-0.19	percent	172	0	-1600	1970	20.0	897
517011	1201062603	10-APR-2006 06:23	DONE	0	-0.19	percent	172	0	-1600	1970	20.0	897
517009	1201062597	10-APR-2006 10:48	DONE	0	-0.19	percent	172	0	-1600	1970	20.0	897
517015	1201062609	10-APR-2006 10:51	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
512595	1201053118	10-APR-2006 13:18	DONE	0	-0.19	percent	172	0	-1600	1970	20.0	897
513799	1201055604	10-APR-2006 15:42	DUSE	137	-0.04	percent	172	0	-1600	1970	20.0	897
513054	1201054081	11-APR-2006 10:21	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
519499	1201068199	11-APR-2006 16:44	DONE	1.67	-0.19	percent	172	0	-1600	1970	20.0	897
520032	1201069386	11-APR-2006 18:59	DONE	3.55	-0.19	percent	172	0	-1600	1970	20.0	897
519008	1201067117	11-APR-2006 19:22	DONE	0	-0.19	percent	172	0	-1600	1970	20.0	897
513058	1201054087	11-APR-2006 21:43	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
518359	1201065660	11-APR-2006 21:47	DONE	0.3	-0.19	percent	172	0	-1600	1970	20.0	897
513802	1201055608	11-APR-2006 23:19	DUSE	298	0.14	percent	172	0	-1600	1970	20.0	897
513780	1201055550	11-APR-2006 23:45	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
518318	1201065556	12-APR-2006 06:21	DONE	0	-0.19	percent	172	0	-1600	1970	20.0	897
518323	1201065569	12-APR-2006 08:23	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
518327	1201065575	12-APR-2006 10:50	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
513066	1201054111	12-APR-2006 13:14	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
513116	1201054237	12-APR-2006 16:32	DONE	0	-0.19	percent	172	0	-1600	1970	20.0	897
518338	1201065600	12-APR-2006 17:54	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
519409	1201067936	13-APR-2006 05:51	DONE	2.47	-0.19	percent	172	0	-1600	1970	20.0	897
513069	1201054126	13-APR-2006 06:02	DUSE	0	-0.19	percent	172	0	-1600	1970	20.0	897
513807	1201055621	14-APR-2006 08:48	DUSE	5610	6.1	percent	172	0	-1600	1970	20.0	897

Cesium-137LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
507629	1201041705	16-MAR-2006 13:15	DONE	112	1.4	percent	100	75.0	83.3	117	125	8.33
507626	1201041699	16-MAR-2006 15:21	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
507622	1201041689	17-MAR-2006 06:12	DONE	102	0.28	percent	100	75.0	83.3	117	125	8.33
508637	1201044145	17-MAR-2006 07:42	DONE	105	0.56	percent	100	75.0	83.3	117	125	8.33
508605	1201044043	17-MAR-2006 09:19	DONE	94.9	-0.61	percent	100	75.0	83.3	117	125	8.33
505207	1201035926	18-MAR-2006 13:44	DONE	103	0.31	percent	100	75.0	83.3	117	125	8.33
512599	1201053131	20-MAR-2006 06:21	DONE	108	0.9	percent	100	75.0	83.3	117	125	8.33
512597	1201053125	20-MAR-2006 07:29	DONE	109	1	percent	100	75.0	83.3	117	125	8.33
508903	1201044758	20-MAR-2006 14:37	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
499544	1201022693	20-MAR-2006 19:52	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
512598	1201053128	20-MAR-2006 20:59	DONE	97.9	-0.25	percent	100	75.0	83.3	117	125	8.33
506206	1201055202	21-MAR-2006 17:35	DONE	106	0.66	percent	100	75.0	83.3	117	125	8.33
509439	1201046013	22-MAR-2006 17:38	DONE	108	0.91	percent	100	75.0	83.3	117	125	8.33
509445	1201046017	22-MAR-2006 17:56	DONE	99.3	-0.08	percent	100	75.0	83.3	117	125	8.33
509577	1201046236	22-MAR-2006 22:50	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
509449	1201046024	23-MAR-2006 12:45	DONE	104	0.49	percent	100	75.0	83.3	117	125	8.33
509579	1201046243	25-MAR-2006 14:21	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
498915	1201021245	26-MAR-2006 20:50	DONE	99.9	-0.01	percent	100	75.0	83.3	117	125	8.33
513814	1201055632	28-MAR-2006 04:36	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
513815	1201055635	28-MAR-2006 20:48	DONE	109	1	percent	100	75.0	83.3	117	125	8.33
512778	1201053531	30-MAR-2006 09:25	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
514959	1201058063	30-MAR-2006 14:51	DONE	96.5	-0.42	percent	100	75.0	83.3	117	125	8.33
513797	1201055598	31-MAR-2006 06:06	DONE	96.9	-0.37	percent	100	75.0	83.3	117	125	8.33
512787	1201053543	04-APR-2006 09:03	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
516236	1201060950	05-APR-2006 06:02	DONE	87.7	-1	percent	100	75.0	83.3	117	125	8.33
513810	1201055629	06-APR-2006 08:46	DONE	107	0.84	percent	100	75.0	83.3	117	125	8.33
517045	1201062678	06-APR-2006 11:31	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
517980	1201064811	06-APR-2006 12:37	DONE	110	1.1	percent	100	75.0	83.3	117	125	8.33
517983	1201064814	07-APR-2006 06:28	DONE	113	1.5	percent	100	75.0	83.3	117	125	8.33
513432	1201054907	08-APR-2006 20:51	DONE	92.6	-0.89	percent	100	75.0	83.3	117	125	8.33
513162	1201054361	09-APR-2006 21:18	DONE	110	1.1	percent	100	75.0	83.3	117	125	8.33
519008	1201067118	11-APR-2006 13:11	DONE	103	0.41	percent	100	75.0	83.3	117	125	8.33
513802	1201055609	11-APR-2006 14:31	DONE	104	0.46	percent	100	75.0	83.3	117	125	8.33
519499	1201068200	11-APR-2006 17:47	DONE	90.7	-1	percent	100	75.0	83.3	117	125	8.33
520032	1201069387	11-APR-2006 18:57	DONE	96.8	-0.38	percent	100	75.0	83.3	117	125	8.33
518359	1201065661	11-APR-2006 20:04	DONE	116	1.9	percent	100	75.0	83.3	117	125	8.33
513799	1201055605	12-APR-2006 12:22	DONE	105	0.64	percent	100	75.0	83.3	117	125	8.33
519409	1201067938	12-APR-2006 22:07	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
513807	1201055622	13-APR-2006 18:53	DONE	108	0.98	percent	100	75.0	83.3	117	125	8.33

Cesium-137RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
512778	1201053530	30-MAR-2006 14:52	DONE	0.01	-0.69	dec	1.04	0	-2	4.04	3.00	1.5
510114	1201047413	30-MAR-2006 21:20	DONE	0	-0.69	dec	1.04	0	-2	4.04	3.00	1.5
513797	1201055597	31-MAR-2006 06:04	DONE	0.69	-0.23	dec	1.04	0	-2	4.04	3.00	1.5
510133	1201047438	31-MAR-2006 09:54	DONE	0	-0.69	dec	1.04	0	-2	4.04	3.00	1.5
510144	1201047451	31-MAR-2006 18:41	DONE	2.06	0.68	dec	1.04	0	-2	4.04	3.00	1.5
510151	1201047469	01-APR-2006 17:56	DONE	0	-0.69	dec	1.04	0	-2	4.04	3.00	1.5
512787	1201053542	01-APR-2006 20:06	DONE	0.4	-0.42	dec	1.04	0	-2	4.04	3.00	1.5
510952	1201049299	04-APR-2006 01:41	DONE	0	-0.69	dec	1.04	0	-2	4.04	3.00	1.5
510881	1201049181	04-APR-2006 06:40	DONE	0	-0.69	dec	1.04	0	-2	4.04	3.00	1.5
516989	1201062555	05-APR-2006 08:18	DUSE	0.81	-0.16	dec	1.04	0	-2	4.04	3.00	1.5
517045	1201062677	05-APR-2006 22:28	DONE	2.01	0.64	dec	1.04	0	-2	4.04	3.00	1.5
516236	1201060949	06-APR-2006 06:01	DONE	8.48	5	dec	1.04	0	-2	4.04	3.00	1.5
516986	1201062546	06-APR-2006 08:33	DUSE	1.98	0.63	dec	1.04	0	-2	4.04	3.00	1.5
516987	1201062549	06-APR-2006 10:43	DUSE	2.05	0.67	dec	1.04	0	-2	4.04	3.00	1.5
513810	1201055628	06-APR-2006 10:52	DONE	0.82	-0.14	dec	1.04	0	-2	4.04	3.00	1.5
510976	1201049347	06-APR-2006 18:47	DUSE	2.51	0.98	dec	1.04	0	-2	4.04	3.00	1.5
510982	1201049355	06-APR-2006 18:47	DONE	1.69	0.43	dec	1.04	0	-2	4.04	3.00	1.5
517980	1201064809	07-APR-2006 06:16	DONE	0.31	-0.49	dec	1.04	0	-2	4.04	3.00	1.5
517983	1201064813	07-APR-2006 06:28	DONE	0.59	-0.3	dec	1.04	0	-2	4.04	3.00	1.5
516999	1201062579	07-APR-2006 08:20	DUSE	1.81	0.51	dec	1.04	0	-2	4.04	3.00	1.5
511760	1201051195	07-APR-2006 10:20	DONE	0	-0.69	dec	1.04	0	-2	4.04	3.00	1.5
513432	1201054906	07-APR-2006 21:54	DONE	0.89	-0.1	dec	1.04	0	-2	4.04	3.00	1.5
517006	1201062591	08-APR-2006 21:38	DONE	0	-0.69	dec	1.04	0	-2	4.04	3.00	1.5
513162	1201054360	09-APR-2006 21:34	DONE	0.35	-0.46	dec	1.04	0	-2	4.04	3.00	1.5
517011	1201062603	10-APR-2006 06:23	DONE	1.11	0.04	dec	1.04	0	-2	4.04	3.00	1.5
517009	1201062597	10-APR-2006 10:48	DONE	0	-0.69	dec	1.04	0	-2	4.04	3.00	1.5
512595	1201053118	10-APR-2006 13:18	DONE	0	-0.69	dec	1.04	0	-2	4.04	3.00	1.5
513799	1201055604	10-APR-2006 15:42	DUSE	0.48	-0.37	dec	1.04	0	-2	4.04	3.00	1.5
519499	1201068199	11-APR-2006 16:44	DONE	0.46	-0.38	dec	1.04	0	-2	4.04	3.00	1.5
520032	1201069386	11-APR-2006 18:59	DONE	1.44	0.27	dec	1.04	0	-2	4.04	3.00	1.5
519008	1201067117	11-APR-2006 19:22	DONE	1.88	0.56	dec	1.04	0	-2	4.04	3.00	1.5
518359	1201065660	11-APR-2006 21:47	DONE	0.01	-0.68	dec	1.04	0	-2	4.04	3.00	1.5
513802	1201055608	11-APR-2006 23:19	DUSE	1.16	0.08	dec	1.04	0	-2	4.04	3.00	1.5
518318	1201065556	12-APR-2006 06:21	DONE	0	-0.69	dec	1.04	0	-2	4.04	3.00	1.5
518333	1201065591	12-APR-2006 10:46	DUSE	2.88	1.2	dec	1.04	0	-2	4.04	3.00	1.5
513116	1201054237	12-APR-2006 16:32	DONE	0	-0.69	dec	1.04	0	-2	4.04	3.00	1.5
513070	1201054129	12-APR-2006 22:10	DUSE	1.15	0.08	dec	1.04	0	-2	4.04	3.00	1.5
519409	1201067936	13-APR-2006 05:51	DONE	0.12	-0.61	dec	1.04	0	-2	4.04	3.00	1.5
513807	1201055621	14-APR-2006 08:48	DUSE	2.34	0.86	dec	1.04	0	-2	4.04	3.00	1.5

Cobalt-60BLANK: Limits LCL = -1.6 UCL = 1.8

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
509666	1201046398	16-MAR-2006 21:46	DONE	00	-0.18	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
508605	1201044041	17-MAR-2006 00:38	DONE	0.01	-0.18	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
507622	1201041686	17-MAR-2006 00:40	DONE	0.01	-0.17	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
508637	1201044143	17-MAR-2006 08:21	DONE	00	-0.19	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
508903	1201044756	17-MAR-2006 22:59	DONE	0.01	-0.17	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
505207	1201035924	18-MAR-2006 00:57	DONE	00	-0.18	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
498916	1201021252	19-MAR-2006 18:01	DONE	2.14	3.6	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
512599	1201053129	20-MAR-2006 10:06	DONE	-0.007	-0.2	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
512597	1201053123	20-MAR-2006 19:22	DONE	00	-0.19	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
499544	1201022690	20-MAR-2006 21:27	DONE	-0.002	-0.19	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
512598	1201053126	21-MAR-2006 12:16	DONE	00	-0.19	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
506206	1201055200	21-MAR-2006 15:02	DONE	0.02	-0.15	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
509445	1201046015	22-MAR-2006 16:50	DUSE	-0	-0.19	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
509439	1201046011	22-MAR-2006 17:38	DONE	00	-0.19	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
509449	1201046022	22-MAR-2006 20:37	DUSE	0.01	-0.17	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
509577	1201046234	22-MAR-2006 22:47	DONE	-0.01	-0.21	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
498915	1201021242	23-MAR-2006 10:30	DONE	0.02	-0.16	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
509579	1201046241	25-MAR-2006 12:07	DUSE	-0	-0.19	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
513814	1201055630	28-MAR-2006 06:09	DONE	0.02	-0.15	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
513815	1201055633	28-MAR-2006 20:47	DONE	0.01	-0.17	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
514959	1201058060	28-MAR-2006 22:16	DONE	00	-0.18	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
512778	1201053529	30-MAR-2006 14:51	DONE	00	-0.18	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
513797	1201055596	30-MAR-2006 23:40	DONE	0	-0.19	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
512787	1201053541	01-APR-2006 20:05	DONE	0.02	-0.16	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
516236	1201060948	03-APR-2006 22:12	DONE	-1.4	-3	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
517983	1201064812	05-APR-2006 18:28	DONE	-0.012	-0.21	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
513810	1201055627	06-APR-2006 09:43	DONE	0.01	-0.16	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
517045	1201062676	06-APR-2006 10:56	DONE	0.06	-0.09	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
517980	1201064808	07-APR-2006 14:52	DONE	0.02	-0.16	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
513432	1201054905	07-APR-2006 17:03	DONE	0.02	-0.15	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
513162	1201054359	10-APR-2006 06:36	DONE	-0.004	-0.2	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
513799	1201055603	10-APR-2006 11:17	DUSE	0.02	-0.15	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
519499	1201068198	11-APR-2006 14:26	DONE	2.46	4.1	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
520032	1201069385	11-APR-2006 16:52	DONE	0.68	1	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
519008	1201067116	11-APR-2006 18:52	DUSE	-0.002	-0.19	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
518359	1201065659	11-APR-2006 18:53	DUSE	00	-0.18	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
513802	1201055607	11-APR-2006 23:19	DUSE	0.03	-0.13	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
519409	1201067935	12-APR-2006 22:06	DONE	0.01	-0.18	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57
513807	1201055620	14-APR-2006 06:29	DUSE	-0.003	-0.19	pCi/g	0.11	-1.6	-1	1.25	1.83	0.57

Cobalt-60DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
507622	1201041687	17-MAR-2006 00:40	DONE	599	0.39	percent	308	0	-1200	1790	20.0	742
508637	1201044144	17-MAR-2006 10:33	DONE	1.3	-0.41	percent	308	0	-1200	1790	20.0	742
498916	1201021255	20-MAR-2006 01:43	DONE	1.93	-0.41	percent	308	0	-1200	1790	20.0	742
498916	1201021256	20-MAR-2006 01:43	DONE	4.05	-0.41	percent	308	0	-1200	1790	20.0	742
512599	1201053130	20-MAR-2006 10:07	DONE	175	-0.18	percent	308	0	-1200	1790	20.0	742
508903	1201044757	20-MAR-2006 14:36	DONE	4260	5.3	percent	308	0	-1200	1790	20.0	742
505207	1201035925	20-MAR-2006 20:56	DONE	60.4	-0.33	percent	308	0	-1200	1790	20.0	742
512597	1201053124	20-MAR-2006 22:02	DONE	3.73	-0.41	percent	308	0	-1200	1790	20.0	742
499544	1201022691	21-MAR-2006 05:31	DONE	1090	1.1	percent	308	0	-1200	1790	20.0	742
512598	1201053127	21-MAR-2006 10:48	DONE	23.3	-0.38	percent	308	0	-1200	1790	20.0	742
506206	1201055201	21-MAR-2006 19:40	DONE	470	0.22	percent	308	0	-1200	1790	20.0	742
498916	1201021257	22-MAR-2006 05:44	DONE	0.13	-0.41	percent	308	0	-1200	1790	20.0	742
509445	1201046016	22-MAR-2006 18:51	DUSE	1770	2	percent	308	0	-1200	1790	20.0	742
509439	1201046012	22-MAR-2006 20:39	DONE	0	-0.41	percent	308	0	-1200	1790	20.0	742
509577	1201046235	22-MAR-2006 22:31	DONE	0	-0.41	percent	308	0	-1200	1790	20.0	742
509449	1201046023	23-MAR-2006 05:27	DUSE	390	0.11	percent	308	0	-1200	1790	20.0	742
498915	1201021243	24-MAR-2006 16:26	DONE	1.55	-0.41	percent	308	0	-1200	1790	20.0	742
509579	1201046242	25-MAR-2006 12:07	DUSE	56	-0.34	percent	308	0	-1200	1790	20.0	742
498915	1201021246	26-MAR-2006 23:53	DONE	6.25	-0.41	percent	308	0	-1200	1790	20.0	742
513814	1201055631	27-MAR-2006 23:07	DONE	5.00	-0.41	percent	308	0	-1200	1790	20.0	742
513815	1201055634	28-MAR-2006 20:48	DONE	25.4	-0.38	percent	308	0	-1200	1790	20.0	742
514959	1201058061	29-MAR-2006 12:17	DONE	4.5	-0.41	percent	308	0	-1200	1790	20.0	742
512778	1201053530	30-MAR-2006 14:52	DONE	202	-0.14	percent	308	0	-1200	1790	20.0	742
513797	1201055597	31-MAR-2006 06:04	DONE	319	0.02	percent	308	0	-1200	1790	20.0	742
517045	1201062677	05-APR-2006 22:28	DONE	153	-0.21	percent	308	0	-1200	1790	20.0	742
516236	1201060949	06-APR-2006 06:01	DONE	2.21	-0.41	percent	308	0	-1200	1790	20.0	742
513810	1201055628	06-APR-2006 10:52	DONE	27	-0.38	percent	308	0	-1200	1790	20.0	742
517980	1201064809	07-APR-2006 06:16	DONE	103	-0.28	percent	308	0	-1200	1790	20.0	742
517983	1201064813	07-APR-2006 06:28	DONE	625	0.43	percent	308	0	-1200	1790	20.0	742
513432	1201054906	07-APR-2006 21:54	DONE	6.24	-0.41	percent	308	0	-1200	1790	20.0	742
513162	1201054360	09-APR-2006 21:34	DONE	15.7	-0.39	percent	308	0	-1200	1790	20.0	742
513799	1201055604	10-APR-2006 15:42	DUSE	221	-0.12	percent	308	0	-1200	1790	20.0	742
519499	1201068199	11-APR-2006 16:44	DONE	1.44	-0.41	percent	308	0	-1200	1790	20.0	742
520032	1201069386	11-APR-2006 18:59	DONE	0.53	-0.41	percent	308	0	-1200	1790	20.0	742
519008	1201067117	11-APR-2006 19:22	DUSE	106	-0.27	percent	308	0	-1200	1790	20.0	742
518359	1201065660	11-APR-2006 21:47	DUSE	48.9	-0.35	percent	308	0	-1200	1790	20.0	742
513802	1201055608	11-APR-2006 23:19	DUSE	779	0.64	percent	308	0	-1200	1790	20.0	742
519409	1201067936	13-APR-2006 05:51	DONE	312	0.01	percent	308	0	-1200	1790	20.0	742
513807	1201055621	14-APR-2006 08:48	DUSE	119	-0.25	percent	308	0	-1200	1790	20.0	742

Cobalt-60LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
507629	1201041705	16-MAR-2006 13:15	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
507626	1201041699	16-MAR-2006 15:21	DONE	105	0.59	percent	100	75.0	83.3	117	125	8.33
507622	1201041689	17-MAR-2006 06:12	DONE	98.6	-0.17	percent	100	75.0	83.3	117	125	8.33
508637	1201044145	17-MAR-2006 07:42	DONE	106	0.72	percent	100	75.0	83.3	117	125	8.33
508605	1201044043	17-MAR-2006 09:19	DONE	99.5	-0.06	percent	100	75.0	83.3	117	125	8.33
505207	1201035926	18-MAR-2006 13:44	DONE	102	0.29	percent	100	75.0	83.3	117	125	8.33
512599	1201053131	20-MAR-2006 06:21	DONE	101	0.07	percent	100	75.0	83.3	117	125	8.33
512597	1201053125	20-MAR-2006 07:29	DONE	98.9	-0.13	percent	100	75.0	83.3	117	125	8.33
508903	1201044758	20-MAR-2006 14:37	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
499544	1201022693	20-MAR-2006 19:52	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
512598	1201053128	20-MAR-2006 20:59	DONE	103	0.34	percent	100	75.0	83.3	117	125	8.33
506206	1201055202	21-MAR-2006 17:35	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
509439	1201046013	22-MAR-2006 17:38	DONE	109	1	percent	100	75.0	83.3	117	125	8.33
509445	1201046017	22-MAR-2006 17:56	DUSE	96.1	-0.47	percent	100	75.0	83.3	117	125	8.33
509577	1201046236	22-MAR-2006 22:50	DONE	104	0.46	percent	100	75.0	83.3	117	125	8.33
509449	1201046024	23-MAR-2006 12:45	DUSE	98.8	-0.14	percent	100	75.0	83.3	117	125	8.33
509579	1201046243	25-MAR-2006 14:21	DUSE	96.1	-0.47	percent	100	75.0	83.3	117	125	8.33
498915	1201021245	26-MAR-2006 20:50	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
513814	1201055632	28-MAR-2006 04:36	DONE	106	0.7	percent	100	75.0	83.3	117	125	8.33
513815	1201055635	28-MAR-2006 20:48	DONE	106	0.77	percent	100	75.0	83.3	117	125	8.33
512778	1201053531	30-MAR-2006 09:25	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
514959	1201058063	30-MAR-2006 14:51	DONE	92.0	-0.96	percent	100	75.0	83.3	117	125	8.33
513797	1201055598	31-MAR-2006 06:06	DONE	93.9	-0.73	percent	100	75.0	83.3	117	125	8.33
512787	1201053543	04-APR-2006 09:03	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
516236	1201060950	05-APR-2006 06:02	DONE	90.9	-1	percent	100	75.0	83.3	117	125	8.33
513810	1201055629	06-APR-2006 08:46	DONE	100	0	percent	100	75.0	83.3	117	125	8.33
517045	1201062678	06-APR-2006 11:31	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
517980	1201064811	06-APR-2006 12:37	DONE	105	0.65	percent	100	75.0	83.3	117	125	8.33
517983	1201064814	07-APR-2006 06:28	DONE	104	0.53	percent	100	75.0	83.3	117	125	8.33
513432	1201054907	08-APR-2006 20:51	DONE	90.2	-1	percent	100	75.0	83.3	117	125	8.33
513162	1201054361	09-APR-2006 21:18	DONE	99.9	-0.02	percent	100	75.0	83.3	117	125	8.33
519008	1201067118	11-APR-2006 13:11	DUSE	97.2	-0.33	percent	100	75.0	83.3	117	125	8.33
513802	1201055609	11-APR-2006 14:31	DONE	102	0.28	percent	100	75.0	83.3	117	125	8.33
519499	1201068200	11-APR-2006 17:47	DONE	92.1	-0.95	percent	100	75.0	83.3	117	125	8.33
520032	1201069387	11-APR-2006 18:57	DONE	90.9	-1	percent	100	75.0	83.3	117	125	8.33
518359	1201065661	11-APR-2006 20:04	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
513799	1201055605	12-APR-2006 12:22	DONE	104	0.5	percent	100	75.0	83.3	117	125	8.33
519409	1201067938	12-APR-2006 22:07	DONE	99.5	-0.06	percent	100	75.0	83.3	117	125	8.33
513807	1201055622	13-APR-2006 18:53	DONE	105	0.59	percent	100	75.0	83.3	117	125	8.33

Cobalt-60RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
508637	1201044144	17-MAR-2006 10:33	DONE	0.28	-0.41	dec	1.65	0	-5.1	8.39	3.00	3.37
498916	1201021255	20-MAR-2006 01:43	DONE	0.43	-0.36	dec	1.65	0	-5.1	8.39	3.00	3.37
498916	1201021256	20-MAR-2006 01:43	DONE	0.67	-0.29	dec	1.65	0	-5.1	8.39	3.00	3.37
512599	1201053130	20-MAR-2006 10:07	DONE	0.44	-0.36	dec	1.65	0	-5.1	8.39	3.00	3.37
508903	1201044757	20-MAR-2006 14:36	DONE	0.14	-0.45	dec	1.65	0	-5.1	8.39	3.00	3.37
505207	1201035925	20-MAR-2006 20:56	DONE	0.46	-0.35	dec	1.65	0	-5.1	8.39	3.00	3.37
512597	1201053124	20-MAR-2006 22:02	DONE	1.26	-0.12	dec	1.65	0	-5.1	8.39	3.00	3.37
499544	1201022691	21-MAR-2006 05:31	DONE	1.22	-0.13	dec	1.65	0	-5.1	8.39	3.00	3.37
512598	1201053127	21-MAR-2006 10:48	DONE	0.49	-0.34	dec	1.65	0	-5.1	8.39	3.00	3.37
506206	1201055201	21-MAR-2006 19:40	DONE	1.56	-0.03	dec	1.65	0	-5.1	8.39	3.00	3.37
498916	1201021257	22-MAR-2006 05:44	DONE	0.02	-0.48	dec	1.65	0	-5.1	8.39	3.00	3.37
509445	1201046016	22-MAR-2006 18:51	DUSE	1.05	-0.18	dec	1.65	0	-5.1	8.39	3.00	3.37
509439	1201046012	22-MAR-2006 20:39	DONE	0.7	-0.28	dec	1.65	0	-5.1	8.39	3.00	3.37
509577	1201046235	22-MAR-2006 22:31	DONE	0.39	-0.37	dec	1.65	0	-5.1	8.39	3.00	3.37
509449	1201046023	23-MAR-2006 05:27	DUSE	0.77	-0.26	dec	1.65	0	-5.1	8.39	3.00	3.37
498915	1201021243	24-MAR-2006 16:26	DONE	0.55	-0.33	dec	1.65	0	-5.1	8.39	3.00	3.37
509579	1201046242	25-MAR-2006 12:07	DUSE	0.68	-0.29	dec	1.65	0	-5.1	8.39	3.00	3.37
498915	1201021246	26-MAR-2006 23:53	DONE	9.5	2.3	dec	1.65	0	-5.1	8.39	3.00	3.37
513814	1201055631	27-MAR-2006 23:07	DONE	4.81	0.94	dec	1.65	0	-5.1	8.39	3.00	3.37
513815	1201055634	28-MAR-2006 20:48	DONE	2.23	0.17	dec	1.65	0	-5.1	8.39	3.00	3.37
514959	1201058061	29-MAR-2006 12:17	DONE	0.73	-0.27	dec	1.65	0	-5.1	8.39	3.00	3.37
512778	1201053530	30-MAR-2006 14:52	DONE	0.86	-0.23	dec	1.65	0	-5.1	8.39	3.00	3.37
513797	1201055597	31-MAR-2006 06:04	DONE	1.42	-0.07	dec	1.65	0	-5.1	8.39	3.00	3.37
512787	1201053542	01-APR-2006 20:06	DONE	0.06	-0.47	dec	1.65	0	-5.1	8.39	3.00	3.37
517045	1201062677	05-APR-2006 22:28	DONE	2.52	0.26	dec	1.65	0	-5.1	8.39	3.00	3.37
516236	1201060949	06-APR-2006 06:01	DONE	19.7	5.3	dec	1.65	0	-5.1	8.39	3.00	3.37
513810	1201055628	06-APR-2006 10:52	DONE	0.05	-0.48	dec	1.65	0	-5.1	8.39	3.00	3.37
517980	1201064809	07-APR-2006 06:16	DONE	1.04	-0.18	dec	1.65	0	-5.1	8.39	3.00	3.37
517983	1201064813	07-APR-2006 06:28	DONE	1.83	0.05	dec	1.65	0	-5.1	8.39	3.00	3.37
513432	1201054906	07-APR-2006 21:54	DONE	0.65	-0.3	dec	1.65	0	-5.1	8.39	3.00	3.37
513162	1201054360	09-APR-2006 21:34	DONE	1.11	-0.16	dec	1.65	0	-5.1	8.39	3.00	3.37
513799	1201055604	10-APR-2006 15:42	DUSE	0.83	-0.24	dec	1.65	0	-5.1	8.39	3.00	3.37
519499	1201068199	11-APR-2006 16:44	DONE	0.52	-0.34	dec	1.65	0	-5.1	8.39	3.00	3.37
520032	1201069386	11-APR-2006 18:59	DONE	2.02	0.11	dec	1.65	0	-5.1	8.39	3.00	3.37
519008	1201067117	11-APR-2006 19:22	DUSE	0.83	-0.25	dec	1.65	0	-5.1	8.39	3.00	3.37
518359	1201065660	11-APR-2006 21:47	DUSE	0.71	-0.28	dec	1.65	0	-5.1	8.39	3.00	3.37
513802	1201055608	11-APR-2006 23:19	DUSE	0.37	-0.38	dec	1.65	0	-5.1	8.39	3.00	3.37
519409	1201067936	13-APR-2006 05:51	DONE	1.01	-0.19	dec	1.65	0	-5.1	8.39	3.00	3.37
513807	1201055621	14-APR-2006 08:48	DUSE	0.56	-0.32	dec	1.65	0	-5.1	8.39	3.00	3.37

Lead-212RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
508637	1201044144	17-MAR-2006 10:33	DONE	0.8	-0.23	dec	1.08	0	-1.3	3.43	3.00	1.18
498916	1201021255	20-MAR-2006 01:43	DUSE	2.61	1.3	dec	1.08	0	-1.3	3.43	3.00	1.18
498916	1201021256	20-MAR-2006 01:43	DUSE	2.22	0.97	dec	1.08	0	-1.3	3.43	3.00	1.18
512599	1201053130	20-MAR-2006 10:07	DONE	1.7	0.53	dec	1.08	0	-1.3	3.43	3.00	1.18
508903	1201044757	20-MAR-2006 14:36	DONE	1.09	0.01	dec	1.08	0	-1.3	3.43	3.00	1.18
505207	1201035925	20-MAR-2006 20:56	DONE	5.43	3.7	dec	1.08	0	-1.3	3.43	3.00	1.18
512597	1201053124	20-MAR-2006 22:02	DONE	0.45	-0.53	dec	1.08	0	-1.3	3.43	3.00	1.18
499544	1201022691	21-MAR-2006 05:31	DONE	0.11	-0.83	dec	1.08	0	-1.3	3.43	3.00	1.18
512598	1201053127	21-MAR-2006 10:48	DONE	0.63	-0.38	dec	1.08	0	-1.3	3.43	3.00	1.18
506206	1201055201	21-MAR-2006 19:40	DONE	1.37	0.25	dec	1.08	0	-1.3	3.43	3.00	1.18
498916	1201021257	22-MAR-2006 05:44	DUSE	0.07	-0.86	dec	1.08	0	-1.3	3.43	3.00	1.18
509445	1201046016	22-MAR-2006 18:51	DUSE	1.25	0.15	dec	1.08	0	-1.3	3.43	3.00	1.18
509439	1201046012	22-MAR-2006 20:39	DUSE	1.01	-0.06	dec	1.08	0	-1.3	3.43	3.00	1.18
509577	1201046235	22-MAR-2006 22:31	DUSE	0.14	-0.8	dec	1.08	0	-1.3	3.43	3.00	1.18
509449	1201046023	23-MAR-2006 05:27	DUSE	0.45	-0.53	dec	1.08	0	-1.3	3.43	3.00	1.18
498915	1201021243	24-MAR-2006 16:26	DUSE	0.59	-0.41	dec	1.08	0	-1.3	3.43	3.00	1.18
509579	1201046242	25-MAR-2006 12:07	DONE	1.81	0.62	dec	1.08	0	-1.3	3.43	3.00	1.18
498915	1201021246	26-MAR-2006 23:53	DUSE	5.06	3.4	dec	1.08	0	-1.3	3.43	3.00	1.18
513814	1201055631	27-MAR-2006 23:07	DONE	0.11	-0.82	dec	1.08	0	-1.3	3.43	3.00	1.18
513815	1201055634	28-MAR-2006 20:48	DONE	1.23	0.13	dec	1.08	0	-1.3	3.43	3.00	1.18
514959	1201058061	29-MAR-2006 12:17	DUSE	0.51	-0.48	dec	1.08	0	-1.3	3.43	3.00	1.18
512778	1201053530	30-MAR-2006 14:52	DONE	00	-0.91	dec	1.08	0	-1.3	3.43	3.00	1.18
513797	1201055597	31-MAR-2006 06:04	DONE	2.29	1	dec	1.08	0	-1.3	3.43	3.00	1.18
512787	1201053542	01-APR-2006 20:06	DONE	0.93	-0.13	dec	1.08	0	-1.3	3.43	3.00	1.18
517045	1201062677	05-APR-2006 22:28	DONE	1.07	-0	dec	1.08	0	-1.3	3.43	3.00	1.18
516236	1201060949	06-APR-2006 06:01	DONE	0.49	-0.5	dec	1.08	0	-1.3	3.43	3.00	1.18
513810	1201055628	06-APR-2006 10:52	DONE	1.26	0.15	dec	1.08	0	-1.3	3.43	3.00	1.18
517980	1201064809	07-APR-2006 06:16	DONE	0.66	-0.36	dec	1.08	0	-1.3	3.43	3.00	1.18
517983	1201064813	07-APR-2006 06:28	DONE	1.27	0.17	dec	1.08	0	-1.3	3.43	3.00	1.18
513432	1201054906	07-APR-2006 21:54	DONE	0.83	-0.21	dec	1.08	0	-1.3	3.43	3.00	1.18
513162	1201054360	09-APR-2006 21:34	DONE	0.5	-0.49	dec	1.08	0	-1.3	3.43	3.00	1.18
513799	1201055604	10-APR-2006 15:42	DONE	0.86	-0.19	dec	1.08	0	-1.3	3.43	3.00	1.18
519499	1201068199	11-APR-2006 16:44	DONE	0.16	-0.78	dec	1.08	0	-1.3	3.43	3.00	1.18
520032	1201069386	11-APR-2006 18:59	DONE	0.8	-0.24	dec	1.08	0	-1.3	3.43	3.00	1.18
519008	1201067117	11-APR-2006 19:22	DUSE	0.16	-0.78	dec	1.08	0	-1.3	3.43	3.00	1.18
518359	1201065660	11-APR-2006 21:47	DUSE	0.04	-0.89	dec	1.08	0	-1.3	3.43	3.00	1.18
513802	1201055608	11-APR-2006 23:19	DONE	0.66	-0.36	dec	1.08	0	-1.3	3.43	3.00	1.18
519409	1201067936	13-APR-2006 05:51	DONE	1.33	0.21	dec	1.08	0	-1.3	3.43	3.00	1.18
513807	1201055621	14-APR-2006 08:48	DONE	0.09	-0.84	dec	1.08	0	-1.3	3.43	3.00	1.18

Radium-226BLANK: Limits LCL = -34.4 UCL = 38.3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
513810	1201055627	06-APR-2006 09:43	DONE	00	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
516987	1201062548	06-APR-2006 10:43	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
517045	1201062676	06-APR-2006 10:56	DUSE	0.08	-0.15	pCi/g	1.92	-34	-22	26.1	38.3	12.1
516991	1201062560	06-APR-2006 11:51	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
516993	1201062566	06-APR-2006 16:35	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
510982	1201049354	06-APR-2006 16:39	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
510976	1201049346	06-APR-2006 18:46	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
516996	1201062572	07-APR-2006 06:08	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
516999	1201062578	07-APR-2006 08:19	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
511760	1201051194	07-APR-2006 10:19	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
517980	1201064808	07-APR-2006 14:52	DUSE	0.1	-0.15	pCi/g	1.92	-34	-22	26.1	38.3	12.1
513432	1201054905	07-APR-2006 17:03	DUSE	0.15	-0.15	pCi/g	1.92	-34	-22	26.1	38.3	12.1
517004	1201062584	08-APR-2006 16:03	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
517006	1201062590	08-APR-2006 21:37	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
517018	1201062614	09-APR-2006 21:09	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
517011	1201062602	10-APR-2006 06:23	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
513162	1201054359	10-APR-2006 06:36	DUSE	0.06	-0.15	pCi/g	1.92	-34	-22	26.1	38.3	12.1
517009	1201062596	10-APR-2006 10:47	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
513799	1201055603	10-APR-2006 11:17	DONE	0.01	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
517015	1201062608	10-APR-2006 13:00	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
512595	1201053117	10-APR-2006 13:17	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
513054	1201054080	11-APR-2006 11:51	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
519499	1201068198	11-APR-2006 14:26	DUSE	75.6	6.1	pCi/g	1.92	-34	-22	26.1	38.3	12.1
520032	1201069385	11-APR-2006 16:52	DUSE	-1.3	-0.27	pCi/g	1.92	-34	-22	26.1	38.3	12.1
519008	1201067116	11-APR-2006 18:52	DUSE	0.02	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
518359	1201065659	11-APR-2006 18:53	DUSE	0.02	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
513058	1201054086	11-APR-2006 21:43	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
513802	1201055607	11-APR-2006 23:19	DONE	0.03	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
513780	1201055549	11-APR-2006 23:45	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
518318	1201065555	12-APR-2006 06:20	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
518323	1201065568	12-APR-2006 08:23	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
518333	1201065590	12-APR-2006 08:31	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
518327	1201065574	12-APR-2006 10:50	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
513070	1201054128	12-APR-2006 13:11	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
513066	1201054110	12-APR-2006 13:14	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
513116	1201054236	12-APR-2006 16:57	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
518338	1201065599	12-APR-2006 17:42	DONE	0	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
519409	1201067935	12-APR-2006 22:06	DUSE	0.01	-0.16	pCi/g	1.92	-34	-22	26.1	38.3	12.1
513807	1201055620	14-APR-2006 06:29	DONE	0.07	-0.15	pCi/g	1.92	-34	-22	26.1	38.3	12.1

Radium-226DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
516993	1201062567	06-APR-2006 16:35	DONE	4.79	-0.4	percent	26.7	0	-83	137	20.0	55
510976	1201049347	06-APR-2006 18:47	DUSE	5.6	-0.38	percent	26.7	0	-83	137	20.0	55
510982	1201049355	06-APR-2006 18:47	DONE	6.21	-0.37	percent	26.7	0	-83	137	20.0	55
516996	1201062573	07-APR-2006 06:09	DUSE	3.19	-0.43	percent	26.7	0	-83	137	20.0	55
517980	1201064809	07-APR-2006 06:16	DUSE	78.2	0.94	percent	26.7	0	-83	137	20.0	55
517983	1201064813	07-APR-2006 06:28	DUSE	5.43	-0.39	percent	26.7	0	-83	137	20.0	55
516999	1201062579	07-APR-2006 08:20	DONE	10.2	-0.3	percent	26.7	0	-83	137	20.0	55
511760	1201051195	07-APR-2006 10:20	DONE	1.26	-0.46	percent	26.7	0	-83	137	20.0	55
516996	1201062573	07-APR-2006 10:31	DONE	3.49	-0.42	percent	26.7	0	-83	137	20.0	55
513432	1201054906	07-APR-2006 21:54	DUSE	16.1	-0.19	percent	26.7	0	-83	137	20.0	55
510976	1201049347	07-APR-2006 22:28	DONE	1.42	-0.46	percent	26.7	0	-83	137	20.0	55
517004	1201062585	08-APR-2006 16:02	DONE	12.6	-0.26	percent	26.7	0	-83	137	20.0	55
517006	1201062591	08-APR-2006 21:38	DONE	6.44	-0.37	percent	26.7	0	-83	137	20.0	55
517018	1201062615	09-APR-2006 21:10	DONE	0.8	-0.47	percent	26.7	0	-83	137	20.0	55
513162	1201054360	09-APR-2006 21:34	DUSE	13.7	-0.24	percent	26.7	0	-83	137	20.0	55
517011	1201062603	10-APR-2006 06:23	DONE	5.28	-0.39	percent	26.7	0	-83	137	20.0	55
517009	1201062597	10-APR-2006 10:48	DONE	51.2	0.44	percent	26.7	0	-83	137	20.0	55
517015	1201062609	10-APR-2006 10:51	DONE	16.8	-0.18	percent	26.7	0	-83	137	20.0	55
512595	1201053118	10-APR-2006 13:18	DONE	18.7	-0.15	percent	26.7	0	-83	137	20.0	55
513799	1201055604	10-APR-2006 15:42	DONE	10.5	-0.3	percent	26.7	0	-83	137	20.0	55
513054	1201054081	11-APR-2006 10:21	DONE	5.59	-0.38	percent	26.7	0	-83	137	20.0	55
519499	1201068199	11-APR-2006 16:44	DUSE	18.9	-0.14	percent	26.7	0	-83	137	20.0	55
520032	1201069386	11-APR-2006 18:59	DUSE	282	4.6	percent	26.7	0	-83	137	20.0	55
519008	1201067117	11-APR-2006 19:22	DUSE	35.4	0.16	percent	26.7	0	-83	137	20.0	55
513058	1201054087	11-APR-2006 21:43	DONE	2.58	-0.44	percent	26.7	0	-83	137	20.0	55
518359	1201065660	11-APR-2006 21:47	DUSE	180	2.8	percent	26.7	0	-83	137	20.0	55
513802	1201055608	11-APR-2006 23:19	DONE	9.98	-0.3	percent	26.7	0	-83	137	20.0	55
513780	1201055550	11-APR-2006 23:45	DONE	10.3	-0.3	percent	26.7	0	-83	137	20.0	55
518318	1201065556	12-APR-2006 06:21	DONE	16.5	-0.19	percent	26.7	0	-83	137	20.0	55
518323	1201065569	12-APR-2006 08:23	DONE	16.1	-0.19	percent	26.7	0	-83	137	20.0	55
518333	1201065591	12-APR-2006 10:46	DONE	2.8	-0.44	percent	26.7	0	-83	137	20.0	55
518327	1201065575	12-APR-2006 10:50	DONE	4.09	-0.41	percent	26.7	0	-83	137	20.0	55
513066	1201054111	12-APR-2006 13:14	DONE	6.63	-0.37	percent	26.7	0	-83	137	20.0	55
513116	1201054237	12-APR-2006 16:32	DONE	9.33	-0.32	percent	26.7	0	-83	137	20.0	55
518338	1201065600	12-APR-2006 17:54	DONE	3.27	-0.43	percent	26.7	0	-83	137	20.0	55
513070	1201054129	12-APR-2006 22:10	DONE	11.7	-0.27	percent	26.7	0	-83	137	20.0	55
519409	1201067936	13-APR-2006 05:51	DUSE	131	1.9	percent	26.7	0	-83	137	20.0	55
513069	1201054126	13-APR-2006 06:02	DUSE	21.2	-0.1	percent	26.7	0	-83	137	20.0	55
513807	1201055621	14-APR-2006 08:48	DONE	2.82	-0.43	percent	26.7	0	-83	137	20.0	55

Radium-226LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
510114	1201047414	31-MAR-2006 13:58	DONE	88.9	-1	percent	100	75.0	83.3	117	125	8.33
510144	1201047452	31-MAR-2006 17:31	DONE	86	-2	percent	100	75.0	83.3	117	125	8.33
510151	1201047470	31-MAR-2006 21:07	DONE	93.8	-0.74	percent	100	75.0	83.3	117	125	8.33
516059	1201060578	01-APR-2006 11:49	DONE	99.0	-0.12	percent	100	75.0	83.3	117	125	8.33
510153	1201047484	03-APR-2006 05:22	DONE	96.7	-0.4	percent	100	75.0	83.3	117	125	8.33
510952	1201049300	04-APR-2006 00:35	DONE	107	0.78	percent	100	75.0	83.3	117	125	8.33
510881	1201049182	04-APR-2006 06:47	DONE	87.3	-2	percent	100	75.0	83.3	117	125	8.33
516989	1201062556	05-APR-2006 08:19	DONE	104	0.46	percent	100	75.0	83.3	117	125	8.33
508902	1201044755	05-APR-2006 09:44	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
508900	1201044749	05-APR-2006 17:37	DONE	100	0	percent	100	75.0	83.3	117	125	8.33
516986	1201062547	06-APR-2006 08:34	DONE	105	0.58	percent	100	75.0	83.3	117	125	8.33
516987	1201062550	06-APR-2006 09:41	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
516993	1201062568	06-APR-2006 18:48	DUSE	121	2.5	percent	100	75.0	83.3	117	125	8.33
516996	1201062574	07-APR-2006 06:22	DONE	103	0.39	percent	100	75.0	83.3	117	125	8.33
516999	1201062580	07-APR-2006 08:20	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
516993	1201062568	07-APR-2006 09:23	DONE	117	2.1	percent	100	75.0	83.3	117	125	8.33
510976	1201049348	07-APR-2006 13:56	DUSE	0	-12	percent	100	75.0	83.3	117	125	8.33
510982	1201049356	07-APR-2006 16:32	DONE	89.7	-1	percent	100	75.0	83.3	117	125	8.33
516991	1201062562	07-APR-2006 17:34	DONE	94	-0.72	percent	100	75.0	83.3	117	125	8.33
511760	1201051196	07-APR-2006 18:35	DONE	94.4	-0.67	percent	100	75.0	83.3	117	125	8.33
510976	1201049348	07-APR-2006 20:56	DONE	92.2	-0.94	percent	100	75.0	83.3	117	125	8.33
517006	1201062592	08-APR-2006 21:40	DONE	85.8	-2	percent	100	75.0	83.3	117	125	8.33
517004	1201062586	08-APR-2006 22:57	DONE	88.8	-1	percent	100	75.0	83.3	117	125	8.33
517018	1201062616	09-APR-2006 21:08	DONE	95.8	-0.51	percent	100	75.0	83.3	117	125	8.33
517011	1201062604	09-APR-2006 22:21	DONE	92.1	-0.94	percent	100	75.0	83.3	117	125	8.33
517009	1201062598	10-APR-2006 10:48	DONE	96.0	-0.48	percent	100	75.0	83.3	117	125	8.33
517015	1201062610	10-APR-2006 12:03	DONE	104	0.45	percent	100	75.0	83.3	117	125	8.33
512595	1201053119	10-APR-2006 13:19	DONE	108	0.97	percent	100	75.0	83.3	117	125	8.33
513054	1201054082	11-APR-2006 11:51	DONE	88.9	-1	percent	100	75.0	83.3	117	125	8.33
513058	1201054088	11-APR-2006 13:59	DONE	94.5	-0.66	percent	100	75.0	83.3	117	125	8.33
513780	1201055551	11-APR-2006 23:46	DONE	90.8	-1	percent	100	75.0	83.3	117	125	8.33
518318	1201065557	12-APR-2006 06:21	DONE	90.4	-1	percent	100	75.0	83.3	117	125	8.33
518323	1201065570	12-APR-2006 08:04	DONE	91.4	-1	percent	100	75.0	83.3	117	125	8.33
518333	1201065592	12-APR-2006 10:01	DONE	93.0	-0.84	percent	100	75.0	83.3	117	125	8.33
518327	1201065576	12-APR-2006 11:08	DONE	90.1	-1	percent	100	75.0	83.3	117	125	8.33
513066	1201054112	12-APR-2006 13:15	DONE	86.4	-2	percent	100	75.0	83.3	117	125	8.33
513070	1201054130	12-APR-2006 14:28	DONE	93.1	-0.83	percent	100	75.0	83.3	117	125	8.33
518338	1201065601	12-APR-2006 15:46	DONE	92.9	-0.85	percent	100	75.0	83.3	117	125	8.33
513116	1201054238	12-APR-2006 16:48	DONE	87.3	-2	percent	100	75.0	83.3	117	125	8.33

Radium-226RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
516993	1201062567	06-APR-2006 16:35	DONE	0.55	-0.43	dec	1.03	0	-1.2	3.26	3.00	1.12
510976	1201049347	06-APR-2006 18:47	DUSE	0.84	-0.17	dec	1.03	0	-1.2	3.26	3.00	1.12
510982	1201049355	06-APR-2006 18:47	DONE	0.49	-0.49	dec	1.03	0	-1.2	3.26	3.00	1.12
516996	1201062573	07-APR-2006 06:09	DUSE	0.3	-0.65	dec	1.03	0	-1.2	3.26	3.00	1.12
517980	1201064809	07-APR-2006 06:16	DUSE	0.63	-0.36	dec	1.03	0	-1.2	3.26	3.00	1.12
517983	1201064813	07-APR-2006 06:28	DUSE	0.4	-0.57	dec	1.03	0	-1.2	3.26	3.00	1.12
516999	1201062579	07-APR-2006 08:20	DONE	1.06	0.03	dec	1.03	0	-1.2	3.26	3.00	1.12
511760	1201051195	07-APR-2006 10:20	DONE	0.08	-0.85	dec	1.03	0	-1.2	3.26	3.00	1.12
516996	1201062573	07-APR-2006 10:31	DONE	0.29	-0.66	dec	1.03	0	-1.2	3.26	3.00	1.12
513432	1201054906	07-APR-2006 21:54	DUSE	0.15	-0.79	dec	1.03	0	-1.2	3.26	3.00	1.12
510976	1201049347	07-APR-2006 22:28	DONE	0.2	-0.74	dec	1.03	0	-1.2	3.26	3.00	1.12
517004	1201062585	08-APR-2006 16:02	DONE	1.81	0.7	dec	1.03	0	-1.2	3.26	3.00	1.12
517006	1201062591	08-APR-2006 21:38	DONE	0.75	-0.25	dec	1.03	0	-1.2	3.26	3.00	1.12
517018	1201062615	09-APR-2006 21:10	DONE	0.08	-0.85	dec	1.03	0	-1.2	3.26	3.00	1.12
513162	1201054360	09-APR-2006 21:34	DUSE	1.17	0.12	dec	1.03	0	-1.2	3.26	3.00	1.12
517011	1201062603	10-APR-2006 06:23	DONE	0.65	-0.34	dec	1.03	0	-1.2	3.26	3.00	1.12
517009	1201062597	10-APR-2006 10:48	DONE	6.54	4.9	dec	1.03	0	-1.2	3.26	3.00	1.12
517015	1201062609	10-APR-2006 10:51	DONE	1.82	0.71	dec	1.03	0	-1.2	3.26	3.00	1.12
512595	1201053118	10-APR-2006 13:18	DONE	1.57	0.49	dec	1.03	0	-1.2	3.26	3.00	1.12
513799	1201055604	10-APR-2006 15:42	DONE	1.31	0.25	dec	1.03	0	-1.2	3.26	3.00	1.12
513054	1201054081	11-APR-2006 10:21	DONE	0.68	-0.32	dec	1.03	0	-1.2	3.26	3.00	1.12
519499	1201068199	11-APR-2006 16:44	DUSE	0.32	-0.64	dec	1.03	0	-1.2	3.26	3.00	1.12
520032	1201069386	11-APR-2006 18:59	DUSE	1.51	0.43	dec	1.03	0	-1.2	3.26	3.00	1.12
519008	1201067117	11-APR-2006 19:22	DUSE	0.36	-0.6	dec	1.03	0	-1.2	3.26	3.00	1.12
513058	1201054087	11-APR-2006 21:43	DONE	0.3	-0.66	dec	1.03	0	-1.2	3.26	3.00	1.12
518359	1201065660	11-APR-2006 21:47	DUSE	2.01	0.88	dec	1.03	0	-1.2	3.26	3.00	1.12
513802	1201055608	11-APR-2006 23:19	DONE	0.89	-0.13	dec	1.03	0	-1.2	3.26	3.00	1.12
513780	1201055550	11-APR-2006 23:45	DONE	1.46	0.38	dec	1.03	0	-1.2	3.26	3.00	1.12
518318	1201065556	12-APR-2006 06:21	DONE	2.22	1.1	dec	1.03	0	-1.2	3.26	3.00	1.12
518323	1201065569	12-APR-2006 08:23	DONE	1.66	0.57	dec	1.03	0	-1.2	3.26	3.00	1.12
518333	1201065591	12-APR-2006 10:46	DONE	0.25	-0.69	dec	1.03	0	-1.2	3.26	3.00	1.12
518327	1201065575	12-APR-2006 10:50	DONE	0.44	-0.52	dec	1.03	0	-1.2	3.26	3.00	1.12
513066	1201054111	12-APR-2006 13:14	DONE	0.6	-0.39	dec	1.03	0	-1.2	3.26	3.00	1.12
513116	1201054237	12-APR-2006 16:32	DONE	0.81	-0.2	dec	1.03	0	-1.2	3.26	3.00	1.12
518338	1201065600	12-APR-2006 17:54	DONE	0.4	-0.57	dec	1.03	0	-1.2	3.26	3.00	1.12
513070	1201054129	12-APR-2006 22:10	DONE	1.74	0.63	dec	1.03	0	-1.2	3.26	3.00	1.12
519409	1201067936	13-APR-2006 05:51	DUSE	1.16	0.12	dec	1.03	0	-1.2	3.26	3.00	1.12
513069	1201054126	13-APR-2006 06:02	DUSE	2.48	1.3	dec	1.03	0	-1.2	3.26	3.00	1.12
513807	1201055621	14-APR-2006 08:48	DONE	0.2	-0.75	dec	1.03	0	-1.2	3.26	3.00	1.12

Radium-228BLANK: Limits LCL = -8.4 UCL = 9.5

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
513810	1201055627	06-APR-2006 09:43	DONE	0.02	-0.17	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
516987	1201062548	06-APR-2006 10:43	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
517045	1201062676	06-APR-2006 10:56	DONE	0.04	-0.16	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
516991	1201062560	06-APR-2006 11:51	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
516993	1201062566	06-APR-2006 16:35	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
510982	1201049354	06-APR-2006 16:39	DONE	0.02	-0.17	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
510976	1201049346	06-APR-2006 18:46	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
516996	1201062572	07-APR-2006 06:08	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
516999	1201062578	07-APR-2006 08:19	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
511760	1201051194	07-APR-2006 10:19	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
517980	1201064808	07-APR-2006 14:52	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
513432	1201054905	07-APR-2006 17:03	DONE	0.21	-0.11	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
517004	1201062584	08-APR-2006 16:03	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
517006	1201062590	08-APR-2006 21:37	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
517018	1201062614	09-APR-2006 21:09	DONE	0.02	-0.17	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
517011	1201062602	10-APR-2006 06:23	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
513162	1201054359	10-APR-2006 06:36	DUSE	0.06	-0.15	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
517009	1201062596	10-APR-2006 10:47	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
513799	1201055603	10-APR-2006 11:17	DONE	00	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
517015	1201062608	10-APR-2006 13:00	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
512595	1201053117	10-APR-2006 13:17	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
513054	1201054080	11-APR-2006 11:51	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
519499	1201068198	11-APR-2006 14:26	DONE	18.6	6.1	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
520032	1201069385	11-APR-2006 16:52	DONE	1.17	0.22	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
519008	1201067116	11-APR-2006 18:52	DUSE	0.01	-0.17	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
518359	1201065659	11-APR-2006 18:53	DUSE	0.13	-0.13	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
513058	1201054086	11-APR-2006 21:43	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
513802	1201055607	11-APR-2006 23:19	DONE	0.01	-0.17	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
513780	1201055549	11-APR-2006 23:45	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
518318	1201065555	12-APR-2006 06:20	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
518323	1201065568	12-APR-2006 08:23	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
518333	1201065590	12-APR-2006 08:31	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
518327	1201065574	12-APR-2006 10:50	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
513070	1201054128	12-APR-2006 13:11	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
513066	1201054110	12-APR-2006 13:14	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
513116	1201054236	12-APR-2006 16:57	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
518338	1201065599	12-APR-2006 17:42	DONE	0	-0.18	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
519409	1201067935	12-APR-2006 22:06	DONE	0.02	-0.17	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98
513807	1201055620	14-APR-2006 06:29	DONE	0.08	-0.15	pCi/g	0.52	-8.4	-5.4	6.48	9.45	2.98

Radium-228DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
516993	1201062567	06-APR-2006 16:35	DONE	10	-0.4	percent	22.6	0	-40	85.2	20.0	31.3
510976	1201049347	06-APR-2006 18:47	DUSE	6.6	-0.51	percent	22.6	0	-40	85.2	20.0	31.3
510982	1201049355	06-APR-2006 18:47	DONE	3.23	-0.62	percent	22.6	0	-40	85.2	20.0	31.3
516996	1201062573	07-APR-2006 06:09	DUSE	10.9	-0.37	percent	22.6	0	-40	85.2	20.0	31.3
517980	1201064809	07-APR-2006 06:16	DONE	38.2	0.5	percent	22.6	0	-40	85.2	20.0	31.3
517983	1201064813	07-APR-2006 06:28	DONE	0.52	-0.7	percent	22.6	0	-40	85.2	20.0	31.3
516999	1201062579	07-APR-2006 08:20	DONE	3.14	-0.62	percent	22.6	0	-40	85.2	20.0	31.3
511760	1201051195	07-APR-2006 10:20	DONE	26.4	0.12	percent	22.6	0	-40	85.2	20.0	31.3
516996	1201062573	07-APR-2006 10:31	DONE	3.15	-0.62	percent	22.6	0	-40	85.2	20.0	31.3
513432	1201054906	07-APR-2006 21:54	DONE	25.9	0.11	percent	22.6	0	-40	85.2	20.0	31.3
510976	1201049347	07-APR-2006 22:28	DONE	11.8	-0.34	percent	22.6	0	-40	85.2	20.0	31.3
517004	1201062585	08-APR-2006 16:02	DONE	5.81	-0.54	percent	22.6	0	-40	85.2	20.0	31.3
517006	1201062591	08-APR-2006 21:38	DONE	4.17	-0.59	percent	22.6	0	-40	85.2	20.0	31.3
517018	1201062615	09-APR-2006 21:10	DONE	15.6	-0.22	percent	22.6	0	-40	85.2	20.0	31.3
513162	1201054360	09-APR-2006 21:34	DUSE	14.9	-0.25	percent	22.6	0	-40	85.2	20.0	31.3
517011	1201062603	10-APR-2006 06:23	DONE	10.7	-0.38	percent	22.6	0	-40	85.2	20.0	31.3
517009	1201062597	10-APR-2006 10:48	DONE	38.1	0.5	percent	22.6	0	-40	85.2	20.0	31.3
517015	1201062609	10-APR-2006 10:51	DONE	12.4	-0.32	percent	22.6	0	-40	85.2	20.0	31.3
512595	1201053118	10-APR-2006 13:18	DONE	22.6	00	percent	22.6	0	-40	85.2	20.0	31.3
513799	1201055604	10-APR-2006 15:42	DONE	1.92	-0.66	percent	22.6	0	-40	85.2	20.0	31.3
513054	1201054081	11-APR-2006 10:21	DONE	1.56	-0.67	percent	22.6	0	-40	85.2	20.0	31.3
519499	1201068199	11-APR-2006 16:44	DONE	27.1	0.14	percent	22.6	0	-40	85.2	20.0	31.3
520032	1201069386	11-APR-2006 18:59	DONE	74.3	1.7	percent	22.6	0	-40	85.2	20.0	31.3
519008	1201067117	11-APR-2006 19:22	DUSE	146	3.9	percent	22.6	0	-40	85.2	20.0	31.3
513058	1201054087	11-APR-2006 21:43	DONE	14.2	-0.27	percent	22.6	0	-40	85.2	20.0	31.3
518359	1201065660	11-APR-2006 21:47	DUSE	103	2.6	percent	22.6	0	-40	85.2	20.0	31.3
513802	1201055608	11-APR-2006 23:19	DONE	0.11	-0.72	percent	22.6	0	-40	85.2	20.0	31.3
513780	1201055550	11-APR-2006 23:45	DONE	3.08	-0.62	percent	22.6	0	-40	85.2	20.0	31.3
518318	1201065556	12-APR-2006 06:21	DONE	20.5	-0.07	percent	22.6	0	-40	85.2	20.0	31.3
518323	1201065569	12-APR-2006 08:23	DONE	2.81	-0.63	percent	22.6	0	-40	85.2	20.0	31.3
518333	1201065591	12-APR-2006 10:46	DONE	34.4	0.38	percent	22.6	0	-40	85.2	20.0	31.3
518327	1201065575	12-APR-2006 10:50	DONE	10.5	-0.38	percent	22.6	0	-40	85.2	20.0	31.3
513066	1201054111	12-APR-2006 13:14	DONE	15.1	-0.24	percent	22.6	0	-40	85.2	20.0	31.3
513116	1201054237	12-APR-2006 16:32	DONE	10.4	-0.39	percent	22.6	0	-40	85.2	20.0	31.3
518338	1201065600	12-APR-2006 17:54	DONE	17.4	-0.16	percent	22.6	0	-40	85.2	20.0	31.3
513070	1201054129	12-APR-2006 22:10	DONE	11.1	-0.37	percent	22.6	0	-40	85.2	20.0	31.3
519409	1201067936	13-APR-2006 05:51	DONE	99.5	2.5	percent	22.6	0	-40	85.2	20.0	31.3
513069	1201054126	13-APR-2006 06:02	DUSE	17.6	-0.16	percent	22.6	0	-40	85.2	20.0	31.3
513807	1201055621	14-APR-2006 08:48	DONE	5.42	-0.55	percent	22.6	0	-40	85.2	20.0	31.3

Radium-228LCS: Limits LCL = 75 UCL = 125

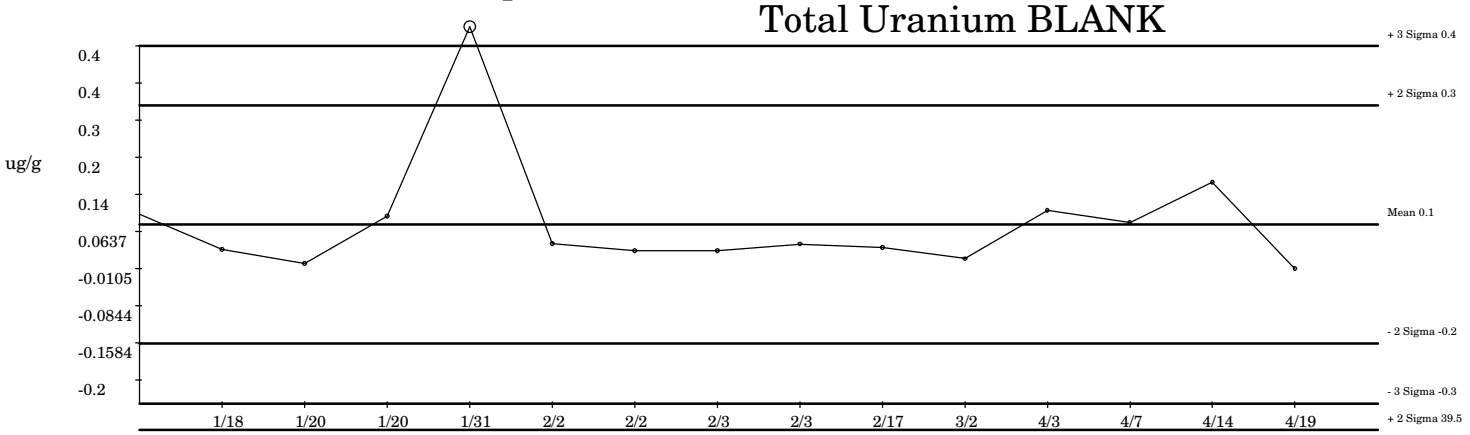
Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
345003	1200653378	01-JUL-2004 19:26	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
347180	1200658503	12-JUL-2004 13:36	DONE	94.8	-0.62	percent	100	75.0	83.3	117	125	8.33
343603	1200650208	16-JUL-2004 11:52	DONE	97.2	-0.34	percent	100	75.0	83.3	117	125	8.33
359453	1200687782	24-AUG-2004 23:18	DONE	100	0.01	percent	100	75.0	83.3	117	125	8.33
359457	1200687791	25-AUG-2004 12:11	DONE	94.9	-0.61	percent	100	75.0	83.3	117	125	8.33
359710	1200688274	25-AUG-2004 17:01	DONE	92.8	-0.86	percent	100	75.0	83.3	117	125	8.33
359720	1200688312	01-SEP-2004 14:23	DONE	103	0.3	percent	100	75.0	83.3	117	125	8.33
358061	1200684548	07-SEP-2004 14:48	DONE	97.1	-0.35	percent	100	75.0	83.3	117	125	8.33
364331	1200699256	09-SEP-2004 12:09	DONE	94.9	-0.61	percent	100	75.0	83.3	117	125	8.33
382774	1200743863	22-NOV-2004 07:06	DONE	94.0	-0.72	percent	100	75.0	83.3	117	125	8.33
382466	1200743128	09-DEC-2004 16:58	DONE	90.8	-1	percent	100	75.0	83.3	117	125	8.33
399581	1200784220	10-FEB-2005 10:29	DONE	99.2	-0.09	percent	100	75.0	83.3	117	125	8.33
399617	1200784322	10-FEB-2005 14:55	DONE	90.3	-1	percent	100	75.0	83.3	117	125	8.33
399589	1200784243	10-FEB-2005 17:20	DONE	88.9	-1	percent	100	75.0	83.3	117	125	8.33
399828	1200784836	11-FEB-2005 09:15	DONE	91.6	-1	percent	100	75.0	83.3	117	125	8.33
406056	1200799617	03-MAR-2005 19:09	DONE	99.0	-0.12	percent	100	75.0	83.3	117	125	8.33
407061	1200801919	09-MAR-2005 06:55	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
411084	1200811555	25-MAR-2005 15:34	DONE	99.9	-0.01	percent	100	75.0	83.3	117	125	8.33
411079	1200811539	27-MAR-2005 10:22	DONE	107	0.84	percent	100	75.0	83.3	117	125	8.33
411095	1200811624	27-MAR-2005 12:17	DONE	98.1	-0.22	percent	100	75.0	83.3	117	125	8.33
411096	1200811596	27-MAR-2005 13:59	DONE	85.2	-2	percent	100	75.0	83.3	117	125	8.33
411082	1200811549	28-MAR-2005 08:30	DONE	98.6	-0.17	percent	100	75.0	83.3	117	125	8.33
411081	1200811544	28-MAR-2005 12:15	DONE	96.9	-0.37	percent	100	75.0	83.3	117	125	8.33
412955	1200816027	31-MAR-2005 11:08	DONE	95.0	-0.6	percent	100	75.0	83.3	117	125	8.33
416592	1200824751	14-APR-2005 10:02	DONE	97.0	-0.36	percent	100	75.0	83.3	117	125	8.33
418044	1200828270	20-APR-2005 07:19	DONE	92.4	-0.91	percent	100	75.0	83.3	117	125	8.33
418049	1200828282	20-APR-2005 18:10	DONE	107	0.84	percent	100	75.0	83.3	117	125	8.33
420732	1200834636	29-APR-2005 15:09	DONE	90.6	-1	percent	100	75.0	83.3	117	125	8.33
420479	1200834014	30-APR-2005 13:54	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
420733	1200834642	01-MAY-2005 20:43	DONE	94.2	-0.7	percent	100	75.0	83.3	117	125	8.33
420727	1200834633	01-MAY-2005 21:49	DONE	91.8	-0.99	percent	100	75.0	83.3	117	125	8.33
425591	1200846646	18-MAY-2005 07:36	DUSE	99.0	-0.12	percent	100	75.0	83.3	117	125	8.33
439055	1200879082	05-JUL-2005 15:03	DONE	103	0.37	percent	100	75.0	83.3	117	125	8.33
439482	1200880146	11-JUL-2005 11:42	DONE	98.2	-0.22	percent	100	75.0	83.3	117	125	8.33
446335	1200896857	28-JUL-2005 21:31	DONE	93.0	-0.84	percent	100	75.0	83.3	117	125	8.33
450952	1200907783	11-AUG-2005 19:15	DONE	92.7	-0.87	percent	100	75.0	83.3	117	125	8.33
454223	1200915333	19-AUG-2005 09:34	DONE	99.0	-0.12	percent	100	75.0	83.3	117	125	8.33
454227	1200915343	19-AUG-2005 21:57	DONE	98.0	-0.24	percent	100	75.0	83.3	117	125	8.33
458471	1200925741	02-SEP-2005 12:34	DONE	95.2	-0.57	percent	100	75.0	83.3	117	125	8.33

Radium-228RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
516993	1201062567	06-APR-2006 16:35	DONE	1.19	0.22	dec	0.98	0	-0.88	2.85	3.00	0.93
510976	1201049347	06-APR-2006 18:47	DUSE	0.44	-0.58	dec	0.98	0	-0.88	2.85	3.00	0.93
510982	1201049355	06-APR-2006 18:47	DONE	0.2	-0.84	dec	0.98	0	-0.88	2.85	3.00	0.93
516996	1201062573	07-APR-2006 06:09	DUSE	0.78	-0.22	dec	0.98	0	-0.88	2.85	3.00	0.93
517980	1201064809	07-APR-2006 06:16	DONE	0.33	-0.7	dec	0.98	0	-0.88	2.85	3.00	0.93
517983	1201064813	07-APR-2006 06:28	DONE	0.02	-1	dec	0.98	0	-0.88	2.85	3.00	0.93
516999	1201062579	07-APR-2006 08:20	DONE	0.34	-0.69	dec	0.98	0	-0.88	2.85	3.00	0.93
511760	1201051195	07-APR-2006 10:20	DONE	0.99	0.01	dec	0.98	0	-0.88	2.85	3.00	0.93
516996	1201062573	07-APR-2006 10:31	DONE	0.24	-0.8	dec	0.98	0	-0.88	2.85	3.00	0.93
513432	1201054906	07-APR-2006 21:54	DONE	0.06	-0.99	dec	0.98	0	-0.88	2.85	3.00	0.93
510976	1201049347	07-APR-2006 22:28	DONE	0.94	-0.05	dec	0.98	0	-0.88	2.85	3.00	0.93
517004	1201062585	08-APR-2006 16:02	DONE	0.67	-0.33	dec	0.98	0	-0.88	2.85	3.00	0.93
517006	1201062591	08-APR-2006 21:38	DONE	0.43	-0.6	dec	0.98	0	-0.88	2.85	3.00	0.93
517018	1201062615	09-APR-2006 21:10	DONE	1.32	0.36	dec	0.98	0	-0.88	2.85	3.00	0.93
513162	1201054360	09-APR-2006 21:34	DUSE	0.56	-0.45	dec	0.98	0	-0.88	2.85	3.00	0.93
517011	1201062603	10-APR-2006 06:23	DONE	1.39	0.43	dec	0.98	0	-0.88	2.85	3.00	0.93
517009	1201062597	10-APR-2006 10:48	DONE	4.9	4.2	dec	0.98	0	-0.88	2.85	3.00	0.93
517015	1201062609	10-APR-2006 10:51	DONE	0.98	-0.01	dec	0.98	0	-0.88	2.85	3.00	0.93
512595	1201053118	10-APR-2006 13:18	DONE	1.17	0.2	dec	0.98	0	-0.88	2.85	3.00	0.93
513799	1201055604	10-APR-2006 15:42	DONE	0.15	-0.89	dec	0.98	0	-0.88	2.85	3.00	0.93
513054	1201054081	11-APR-2006 10:21	DONE	0.2	-0.84	dec	0.98	0	-0.88	2.85	3.00	0.93
519499	1201068199	11-APR-2006 16:44	DONE	0.35	-0.68	dec	0.98	0	-0.88	2.85	3.00	0.93
520032	1201069386	11-APR-2006 18:59	DONE	0.31	-0.72	dec	0.98	0	-0.88	2.85	3.00	0.93
519008	1201067117	11-APR-2006 19:22	DUSE	1.04	0.06	dec	0.98	0	-0.88	2.85	3.00	0.93
513058	1201054087	11-APR-2006 21:43	DONE	1.81	0.89	dec	0.98	0	-0.88	2.85	3.00	0.93
518359	1201065660	11-APR-2006 21:47	DUSE	1.39	0.43	dec	0.98	0	-0.88	2.85	3.00	0.93
513802	1201055608	11-APR-2006 23:19	DONE	0.01	-1	dec	0.98	0	-0.88	2.85	3.00	0.93
513780	1201055550	11-APR-2006 23:45	DONE	0.3	-0.74	dec	0.98	0	-0.88	2.85	3.00	0.93
518318	1201065556	12-APR-2006 06:21	DONE	2.44	1.6	dec	0.98	0	-0.88	2.85	3.00	0.93
518323	1201065569	12-APR-2006 08:23	DONE	0.31	-0.72	dec	0.98	0	-0.88	2.85	3.00	0.93
518333	1201065591	12-APR-2006 10:46	DONE	2.06	1.2	dec	0.98	0	-0.88	2.85	3.00	0.93
518327	1201065575	12-APR-2006 10:50	DONE	1.05	0.07	dec	0.98	0	-0.88	2.85	3.00	0.93
513066	1201054111	12-APR-2006 13:14	DONE	1.27	0.31	dec	0.98	0	-0.88	2.85	3.00	0.93
513116	1201054237	12-APR-2006 16:32	DONE	0.67	-0.34	dec	0.98	0	-0.88	2.85	3.00	0.93
518338	1201065600	12-APR-2006 17:54	DONE	2.09	1.2	dec	0.98	0	-0.88	2.85	3.00	0.93
513070	1201054129	12-APR-2006 22:10	DONE	1.82	0.9	dec	0.98	0	-0.88	2.85	3.00	0.93
519409	1201067936	13-APR-2006 05:51	DONE	1.74	0.81	dec	0.98	0	-0.88	2.85	3.00	0.93
513069	1201054126	13-APR-2006 06:02	DUSE	2.08	1.2	dec	0.98	0	-0.88	2.85	3.00	0.93
513807	1201055621	14-APR-2006 08:48	DONE	0.29	-0.75	dec	0.98	0	-0.88	2.85	3.00	0.93

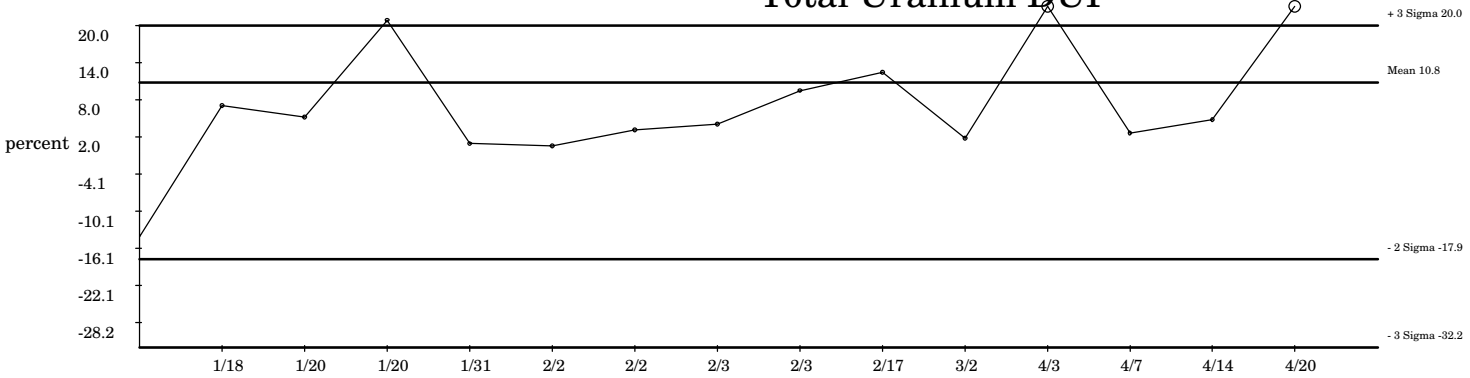
SPC Graph for Total Uranium KPA in Solids 4/20/2006

Total Uranium BLANK



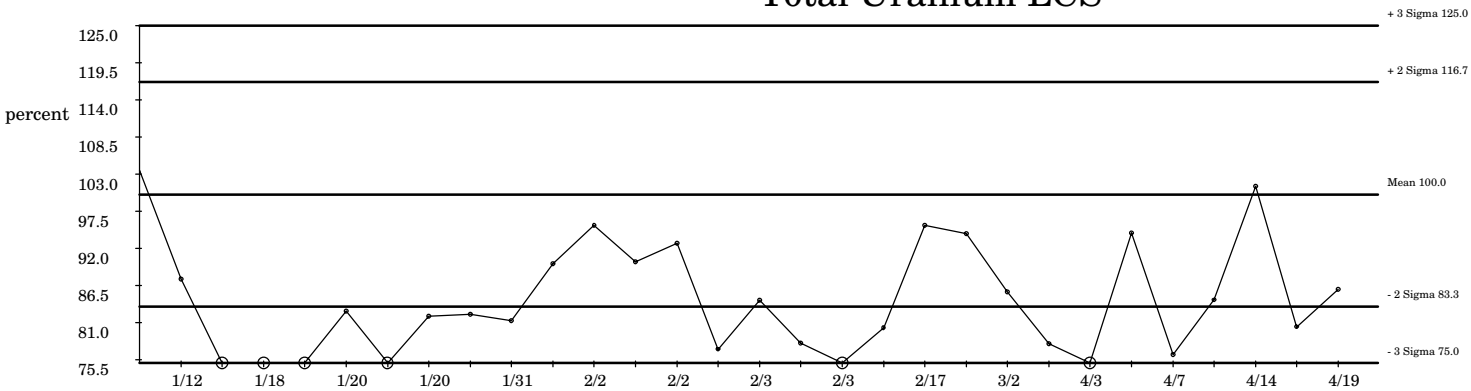
DATE

Total Uranium DUP



DATE

Total Uranium LCS



DATE

Total Uranium RER

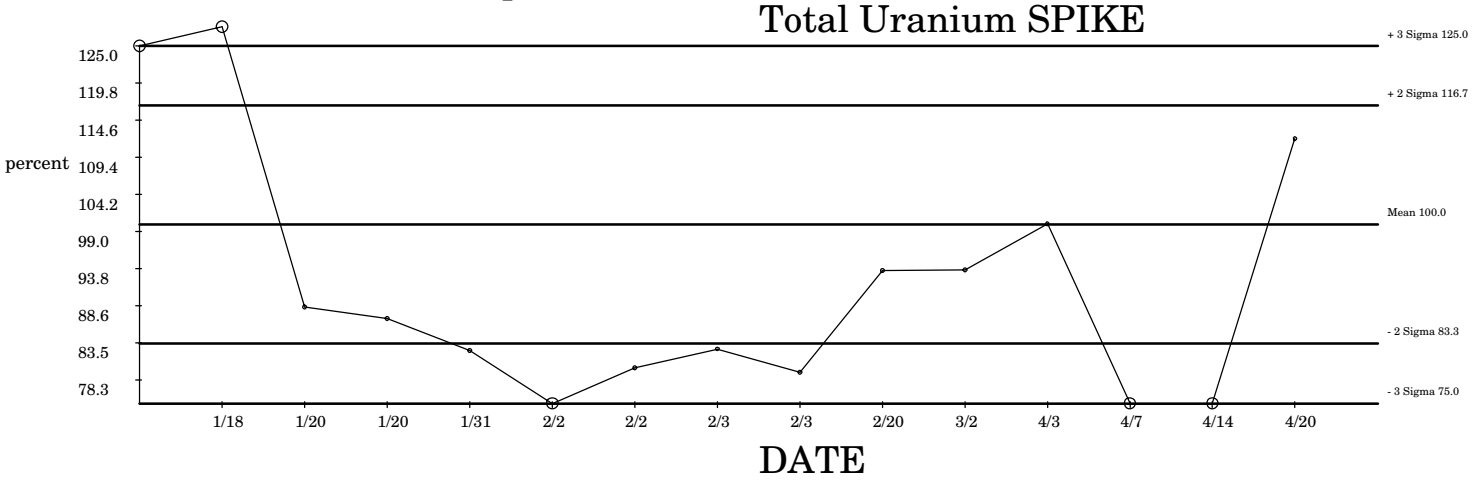
dec
Data contains 1 point(s)

○ Denotes Outlier

DATE

SPC Graph for Total Uranium KPA in Solids 4/20/2006

Total Uranium SPIKE



DATE

○ Denotes Outlier

Data used for Total Uranium KPA in Solids 21-APR-2006

Total Uranium BLANK: Limits LCL = -.3 UCL = .4

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
492781	1201007372	12-JAN-2006 13:38	DONE	0.06	-0.17	ug/g	0.08	-0.279	-0.16	0.32	0.43	0.12
494246	1201010694	18-JAN-2006 10:17	DUSE	0.03	-0.42	ug/g	0.08	-0.279	-0.16	0.32	0.43	0.12
493748	1201009625	20-JAN-2006 11:52	DUSE	0	-0.65	ug/g	0.08	-0.279	-0.16	0.32	0.43	0.12
493750	1201009630	20-JAN-2006 12:06	DUSE	0.09	0.14	ug/g	0.08	-0.279	-0.16	0.32	0.43	0.12
496204	1201015077	31-JAN-2006 13:42	DONE	0.47	3.3	ug/g	0.08	-0.279	-0.16	0.32	0.43	0.12
499915	1201023682	02-FEB-2006 13:17	DONE	0.04	-0.32	ug/g	0.08	-0.279	-0.16	0.32	0.43	0.12
495063	1201012509	02-FEB-2006 14:02	DONE	0.03	-0.44	ug/g	0.08	-0.279	-0.16	0.32	0.43	0.12
496854	1201016615	03-FEB-2006 10:55	DONE	0.03	-0.44	ug/g	0.08	-0.279	-0.16	0.32	0.43	0.12
496856	1201016624	03-FEB-2006 14:13	DONE	0.04	-0.33	ug/g	0.08	-0.279	-0.16	0.32	0.43	0.12
503736	1201032423	17-FEB-2006 15:58	DONE	0.03	-0.39	ug/g	0.08	-0.279	-0.16	0.32	0.43	0.12
504168	1201033463	02-MAR-2006 09:57	DONE	0.01	-0.57	ug/g	0.08	-0.279	-0.16	0.32	0.43	0.12
515698	1201059829	03-APR-2006 10:06	DUSE	0.11	0.24	ug/g	0.08	-0.279	-0.16	0.32	0.43	0.12
517556	1201063863	07-APR-2006 13:10	DONE	0.08	0.03	ug/g	0.08	-0.279	-0.16	0.32	0.43	0.12
519916	1201069138	14-APR-2006 10:53	DUSE	0.16	0.71	ug/g	0.08	-0.279	-0.16	0.32	0.43	0.12
521637	1201073174	19-APR-2006 10:37	DONE	-0.01	-0.74	ug/g	0.08	-0.279	-0.16	0.32	0.43	0.12

Total Uranium DUP: Limits LCL = -32.2 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
492781	1201007373	12-JAN-2006 13:43	DONE	2.05	-0.61	percent	10.8	-32	-18	39.5	20.0	14.3
494246	1201010695	18-JAN-2006 10:22	DUSE	7.05	-0.26	percent	10.8	-32	-18	39.5	20.0	14.3
493748	1201009626	20-JAN-2006 11:57	DUSE	5.2	-0.39	percent	10.8	-32	-18	39.5	20.0	14.3
493750	1201009631	20-JAN-2006 12:09	DUSE	20.9	0.7	percent	10.8	-32	-18	39.5	20.0	14.3
496204	1201015078	31-JAN-2006 12:18	DONE	0.87	-0.69	percent	10.8	-32	-18	39.5	20.0	14.3
499915	1201023683	02-FEB-2006 13:22	DONE	0.52	-0.72	percent	10.8	-32	-18	39.5	20.0	14.3
495063	1201012510	02-FEB-2006 14:07	DONE	3.13	-0.54	percent	10.8	-32	-18	39.5	20.0	14.3
496854	1201016616	03-FEB-2006 10:58	DONE	4.08	-0.47	percent	10.8	-32	-18	39.5	20.0	14.3
496856	1201016625	03-FEB-2006 14:17	DONE	9.49	-0.09	percent	10.8	-32	-18	39.5	20.0	14.3
503736	1201032424	17-FEB-2006 16:03	DONE	12.4	0.11	percent	10.8	-32	-18	39.5	20.0	14.3
504168	1201033464	02-MAR-2006 10:01	DONE	1.78	-0.63	percent	10.8	-32	-18	39.5	20.0	14.3
515698	1201059830	03-APR-2006 10:09	DUSE	43.3	2.3	percent	10.8	-32	-18	39.5	20.0	14.3
517556	1201063864	07-APR-2006 13:14	DONE	2.53	-0.58	percent	10.8	-32	-18	39.5	20.0	14.3
519916	1201069139	14-APR-2006 12:42	DUSE	4.8	-0.42	percent	10.8	-32	-18	39.5	20.0	14.3
521637	1201073175	20-APR-2006 15:13	DONE	43.8	2.3	percent	10.8	-32	-18	39.5	20.0	14.3

Total Uranium LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
492781	1201007376	12-JAN-2006 13:52	DONE	96.4	-0.43	percent	100	75.0	83.3	117	125	8.33
492781	1201007375	12-JAN-2006 14:39	DONE	87.4	-2	percent	100	75.0	83.3	117	125	8.33
494246	1201010697	18-JAN-2006 10:28	DUSE	63.8	-4	percent	100	75.0	83.3	117	125	8.33
494246	1201010698	18-JAN-2006 10:30	DUSE	65.6	-4	percent	100	75.0	83.3	117	125	8.33
493748	1201009628	20-JAN-2006 12:01	DUSE	70.8	-3	percent	100	75.0	83.3	117	125	8.33
493748	1201009629	20-JAN-2006 12:05	DUSE	82.6	-2	percent	100	75.0	83.3	117	125	8.33
493750	1201009633	20-JAN-2006 12:17	DUSE	70.1	-4	percent	100	75.0	83.3	117	125	8.33
493750	1201009634	20-JAN-2006 12:19	DUSE	81.9	-2	percent	100	75.0	83.3	117	125	8.33
496204	1201015081	31-JAN-2006 12:31	DONE	82.2	-2	percent	100	75.0	83.3	117	125	8.33
496204	1201015080	31-JAN-2006 13:21	DONE	81.3	-2	percent	100	75.0	83.3	117	125	8.33
499915	1201023685	02-FEB-2006 13:29	DONE	89.8	-1	percent	100	75.0	83.3	117	125	8.33
499915	1201023686	02-FEB-2006 13:31	DONE	95.4	-0.55	percent	100	75.0	83.3	117	125	8.33
495063	1201012512	02-FEB-2006 14:15	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
495063	1201012513	02-FEB-2006 14:19	DONE	92.7	-0.87	percent	100	75.0	83.3	117	125	8.33
496854	1201016618	03-FEB-2006 11:06	DONE	77	-3	percent	100	75.0	83.3	117	125	8.33
496854	1201016619	03-FEB-2006 11:07	DONE	84.3	-2	percent	100	75.0	83.3	117	125	8.33
496856	1201016627	03-FEB-2006 14:24	DONE	77.9	-3	percent	100	75.0	83.3	117	125	8.33
496856	1201016628	03-FEB-2006 14:26	DONE	74.6	-3	percent	100	75.0	83.3	117	125	8.33
503736	1201032426	17-FEB-2006 16:09	DONE	80.3	-2	percent	100	75.0	83.3	117	125	8.33
503736	1201032427	17-FEB-2006 16:11	DONE	95.4	-0.55	percent	100	75.0	83.3	117	125	8.33
504168	1201033466	02-MAR-2006 10:08	DONE	94.2	-0.7	percent	100	75.0	83.3	117	125	8.33
504168	1201033467	02-MAR-2006 10:12	DONE	85.5	-2	percent	100	75.0	83.3	117	125	8.33
515698	1201059833	03-APR-2006 10:15	DUSE	77.9	-3	percent	100	75.0	83.3	117	125	8.33
515698	1201059832	03-APR-2006 10:20	DUSE	65.5	-4	percent	100	75.0	83.3	117	125	8.33
517556	1201063867	07-APR-2006 13:19	DONE	94.3	-0.69	percent	100	75.0	83.3	117	125	8.33
517556	1201063866	07-APR-2006 13:24	DONE	76.2	-3	percent	100	75.0	83.3	117	125	8.33
519916	1201069141	14-APR-2006 11:04	DUSE	84.4	-2	percent	100	75.0	83.3	117	125	8.33
519916	1201069142	14-APR-2006 11:06	DUSE	101	0.14	percent	100	75.0	83.3	117	125	8.33
521637	1201073177	19-APR-2006 10:46	DONE	80.4	-2	percent	100	75.0	83.3	117	125	8.33
521637	1201073178	19-APR-2006 10:48	DONE	85.9	-2	percent	100	75.0	83.3	117	125	8.33

Total Uranium RER: Limits LCL = 2.1 UCL = 2.1

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
521637	1201073175	20-APR-2006 15:13	DONE	2.11		dec	2.11	2.11	2.11	2.11	2.11	0

Total Uranium SPIKE: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
492781	1201007374	12-JAN-2006 13:46	DONE	38.6	-7	percent	100	75.0	83.3	117	125	8.33
494246	1201010696	18-JAN-2006 10:25	DUSE	168	8.2	percent	100	75.0	83.3	117	125	8.33
493748	1201009627	20-JAN-2006 11:58	DUSE	88.5	-1	percent	100	75.0	83.3	117	125	8.33
493750	1201009632	20-JAN-2006 12:13	DUSE	86.9	-2	percent	100	75.0	83.3	117	125	8.33
496204	1201015079	31-JAN-2006 13:18	DONE	82.4	-2	percent	100	75.0	83.3	117	125	8.33
499915	1201023684	02-FEB-2006 13:26	DONE	56	-5	percent	100	75.0	83.3	117	125	8.33
495063	1201012511	02-FEB-2006 14:11	DONE	80	-2	percent	100	75.0	83.3	117	125	8.33
496854	1201016617	03-FEB-2006 11:02	DONE	82.6	-2	percent	100	75.0	83.3	117	125	8.33
496856	1201016626	03-FEB-2006 14:21	DONE	79.3	-2	percent	100	75.0	83.3	117	125	8.33
503736	1201032425	20-FEB-2006 10:29	DONE	93.6	-0.77	percent	100	75.0	83.3	117	125	8.33
504168	1201033465	02-MAR-2006 10:05	DONE	93.7	-0.76	percent	100	75.0	83.3	117	125	8.33
515698	1201059831	03-APR-2006 11:04	DUSE	100	0.02	percent	100	75.0	83.3	117	125	8.33
517556	1201063865	07-APR-2006 13:18	DONE	66.6	-4	percent	100	75.0	83.3	117	125	8.33
519916	1201069140	14-APR-2006 11:00	DUSE	29.5	-8	percent	100	75.0	83.3	117	125	8.33
521637	1201073176	20-APR-2006 15:15	DONE	112	1.4	percent	100	75.0	83.3	117	125	8.33

STANDARDS DATA

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

0159

Radionuclide	Th-230	Customer:	GENERAL ENGINEERING LABS
Half Life:	(7.54 ± 0.03) x 10^4 years	P.O.No.:	2507 RD
Catalog No.:	7230	Reference Date:	1 Sep 99 12:00 PST.
Source No.:	678-28-1	Contained Radioactivity:	Th-230: 9.740 μCi (360.4 kBq)

Description of Solution

a. Mass of solution: 4.89252 grams in 5 mL flame sealed ampoule
b. Chemical form: Thorium nitrate in 0.1M nitric acid
c. Carrier content: 10 μg Th/mL of solution
d. Density: 1.0016 gram/ml @ 20°C.

Radioimpurities

Am-241: See Technical Data Sheet

Radioactive Daughters

Ra-226: See Technical Data Sheet

Radionuclide Concentration

Th-230: 1.991 μCi/gram of solution (73.67 kBq/gram of solution)

Method of Calibration

Weighed aliquots of the solution were assayed using a liquid scintillation counter.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:	±2.0%
b. Random uncertainty in assay:	±0.8%
c. Random uncertainty in weighing(s):	±0.0%
d. Total uncertainty at the 99% confidence level:	±2.2%

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay(and later NIST certification) of Standard Reference Materials. (As in NRC Regulatory Guide 4.15)

2. Nuclear data were taken from Table of Radioactive Isotopes (1986), edited by Virginia Shirley.

Daniel James Van Dalsem
QUALITY CONTROL

26-Aug-99
Date Signed

ISOTOPE PRODUCTS LABORATORIES
1800 N. KEYSTONE STREET
BURBANK, CALIFORNIA 91504
818·843·7000 FAX 818·843·6168

RCS-024-102

ISOTOPE PRODUCTS LABORATORIES

0159

Th-230 TECHNICAL DATA

The Th-230 used to prepare your order was taken from Isotope Products Laboratories Lot #6481 and had the following composition as of December 15, 1994.

NUCLIDE	ATOM%	ACTIVITY%
Th-229	<0.001	$<1.23 \times 10^{-2}$
Th-230	83.71	99.79
Th-232	16.29	1.08×10^{-4}
Ra-226 (daughter Th-230)	----	0.15
Am-241	----	0.05

Isotopic composition provided by Oak Ridge National Laboratory.

No other alpha emitting nuclides were detected.

If you have any questions, please contact Technical Service.

Corporate and ... Laboratory
1800 N. Keystone Street
Burbank, California
91504
818•843-7000
Fax 818•843•6168

RC-5-024-102A

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0159
Prepared By:	Joe Davis
Carrier Conc:	0.1M HNO3
Reference Date:	09/01/1999
Ampoule Mass (g):	4.89252 g
Uncertainty:	+/- 2.2 %
LogBook No:	RC S 023 102

A Solution Material Info	
Isotope:	Thorium-230
Prepared By:	Joe Davis
Prep Date:	09/21/1999
Verification Date:	06/19/2004
Expiration Date:	06/19/2005
Primary Code:	0159-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.7484 g
Density(g/mL):	0.9992

Calculations Converting parent activity to dpm/mL | dpm/g

(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(4.7484 g) * (1.991 uCi/g) * (2220000 dpm/uCi) / (100 mL) = 209880.2297 dpm/mL
(4.7484 g) * (1.991 uCi/g) * (2220000 dpm/uCi) / (0.9992 g/mL) / (100 mL) = 210051.8397 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/29/2001	Angela Albee	.0992	100	0159-H	208.37 dpm/mL	01/29/2001	01/29/2002
02/28/2001	Angela Albee	1.0451	1000	0159-I-102	219.525 dpm/mL	03/06/2002	03/06/2003
02/28/2001	Angela Albee	1.0451	1000	0159-I-202	219.525 dpm/mL	03/12/2002	03/12/2003
09/21/1999	Joe Davis	.1172	100	0159-B	246.18 dpm/mL	09/21/1999	09/21/2000
09/23/1999	Joe Davis	.1016	100	0159-C	213.41 dpm/mL	09/23/1999	09/23/2000
01/10/2000	Joe Davis	.1008	100	0159-D	211.56 dpm/mL	01/10/2000	01/10/2001
02/16/2000	Richard Kinney	.2422	500	0159-E	101.75 dpm/mL	02/16/2000	02/16/2001
03/20/2000	Joe Davis	.0998	100	0159-F	209.63 dpm/mL	03/20/2000	03/20/2001
07/28/2000	Robert Timm	1.0046	1000	0159-G	211.02 dpm/mL	07/28/2000	07/28/2001
05/10/2001	Angela Albee	.0987	1000	0159-J	210.1569 dpm/mL	05/10/2001	05/10/2002
08/31/2001	Lonnie Morris	.0416	100	0159-K	87.31 dpm/mL	09/23/2002	09/23/2003
06/07/2002	Angela Albee	1.0002	1000	0159-L	207.278 dpm/mL	06/07/2002	06/07/2003
01/16/2003	Angela Albee	4.5144	1000	0159-M	947.483 dpm/mL	01/16/2003	01/16/2004
02/27/2003	Angela Albee	1.1079	1000	0159-N	232.526 dpm/mL	02/27/2004	02/27/2005
06/23/2004	Amanda Fehr	1.14	1000	0159-O	239.459 dpm/mL	07/03/2005	07/03/2006

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

Verification for Th-230 Standard 0159-O

A. Fehr
7/3/2005

Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff	Standard Amt Used (mL)	Source DPM/mL
0159-N N1	258.0000	23.3000	234.7000	0.9696	1.0000	242.0585809
0159-N N2	259.3000	23.3000	236.0000	0.9696	1.0000	243.3993399
0159-N N3	255.4000	23.3000	232.1000	0.9696	1.0000	239.3770627

Mean Value (Counting) =	241.6116612	dpm/mL	**100.903182**	**% of known**
Stdev =	2.048043318	dpm/mL	0.00847659	
Certificate Value =	239.449	dpm/mL		
Lower Limit =	237.5155745	dpm/mL		
Upper Limit =	245.7077478	dpm/mL		
Rule 1 Pass/Fail	**Pass**	**Pass**	**Pass**	
Two sigma =	4.096086636			
10 % of Mean =	24.16116612			
Rule 2 (Pass/Fail)	**Pass**			

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

The analyst prepared three standard verification sources for Th-230 source 0159-O by transferring 1.0 mL portions of the standard to glass liquid scintillation vials. Ten mL of Ready Gel liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 1 mL of DI water and 10 mL of Ready Gel cocktail. The standard verification vials and Background source were dark adapted for two hours and counted on LSC Yellow (Wallac) using Protocol 26 for alpha source standard verification. The alpha efficiency calibration which was used for verification calculations was performed using NIST source 0556-A (Th-230). Calibration data is recorded in this logbook under Th-230 0556-A. Each verification source calculation was performed as follows:

Source dpm/g = (A - B)/(C)(D)
where:
A = Ver. source cpm,
B = BKG cpm,
C = System efficiency, (cpm/dpm), and
D = mass used for standard verification.
Reference RAD SOP M-001

Amanda L. Fehr 7/13/05

Angela A. Johnson 7/15/05

0387

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

61762-278

Ac-227 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked by alpha spectroscopy. The nuclear decay rate and assay date for this source are given below.

Analytics maintains traceability to the National Institute of Standards and Technology through participation in a Measurements Assurance Program as described in USNRC Reg. Guide 4.15, Revision 1, February 1979.

ISOTOPE:	Ac-227
ACTIVITY (dps):	2.085 E5
HALF-LIFE:	21.77 years
CALIBRATION DATE:	June 8, 2001 12:00 EST
TOTAL UNCERTAINTY*:	5.0%
SYSTEMATIC:	2.0%
RANDOM:	3.0%

*99% Confidence Level

Impurities: γ-impurities (other than decay products) <0.1%
α-impurities <0.3%

5.3136 grams 2M HNO_3 solution, carrier free.

P O NUMBER 2533RD, Item 2

SOURCE PREPARED BY: _____
E. A. Taskaev, Production Manager

Q A APPROVED: 6/26/01

RC-S-034-049a

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0387
Prepared By:	Angela Johnson
Carrier Conc:	2 M HNO3
Reference Date:	06/08/2001
Ampoule Mass (g):	5.3136 g
Uncertainty:	+/- 5 %
LogBook No:	RC S 034

A Solution Material Info	
Isotope:	Actinium-227
Prepared By:	Angela Johnson
Prep Date:	07/17/2001
Verification Date:	07/01/2002
Expiration Date:	07/01/2003
Primary Code:	0387-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.7794 g
Density(g/mL):	1.0370

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (dps)) * (conversion dpm to dps) / (Ampoule Mass(g) *(Dilution Vol)) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (dps)) * (conversion dpm to dps) / Density / (Ampoule Mass (g) * (Dilution Vol)) = Parent Activity (dpm/g)
(4.7794 g) * (208500 dps) * (59.9 dpm/dps) / (5.3136 g * 100 mL) = 112335.5983 dpm/mL
(4.7794 g) * (208500 dps) * (59.9 dpm/dps) / (1.0370 g/mL)/ (5.3136 g * 100 mL) = 108330.3019 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
07/17/2001	Lonnie Morris	.4684	1000	0387-B-102	50.8266 dpm/mL	07/11/2005	07/11/2006
07/17/2001	Lonnie Morris	.4684	1000	0387-B-202	50.827 dpm/mL	07/11/2004	07/11/2005

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

Verification for Ac-227 Standard 0387-B

A. Fehr 7/13/2005	Isotope 0387-B #1 0387-B #2 0387-B #3	Value 193.600 181.200 192.900	Uncertainty 38.1000 36.2000 52.4000
Mean Value (Counting) =	189.233	0.9416936	
Stdev =	6.965869173		
Target =	200.95		
Lower Limit =	175.301595		
Upper Limit =	203.1650717		
Rule 1 Pass/Fail	**Pass**	**Pass**	**Pass**
Two sigma =	13.93173835		
10 % of Mean =	18.92333333		
Rule 2 (Pass/Fail)	**Pass**		

The analyst prepared three standard verification sources for standard 0387-B using 0.1 mL for each source. Each standard was combined with 0.1 mL of Th-230 standard 0159-K and 50 micrograms of cerium carrier in a disposable centrifuge tube. Each standard was diluted to 20 mL with 0.1 M HCl. Three mL of 48% HF was added to precipitate cerium(and Thorium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Ac-227 were calculated by comparison to Th-230 certified values.

Amanda L. Fehr
7/13/05

STANDARDIZATION OF LEAD CARRIER

DATE: 1/30/2006
LOT NUMBER: 1006864

	LEAD PRECIPITATES				Average	Std. Dev.	
	1	2	3	4	13.88	± 0.05	0.003604
Weight of carrier added	1.00	1.01	1.00	1.01	13.81	± 0.12	0.008355
Aliquot (1.00 mL)	1	1	1	1			
filter + ppt	0.0975	0.0970	0.0979	0.0978			
filter	0.0836	0.0832	0.0840	0.0839			
Wt. of ppt., g	0.0139	0.0138	0.0139	0.0139	**13.88**	**mg Pb/mL**	
					13.81	**mg Pb/g**	
mg Ca/mL	13.90	13.80	13.90	13.90			
mg Ca/g	13.90	13.66	13.90	13.76			

0.5% of Mean Value = 0.069 Pass

A satisfactory standardization is obtained when results give a standard deviation of less than 0.5% of the mean value.

DEUTSCHER KALIBRIERDIENST (DKD)

Kalibrierlaboratorium für Meßgrößen der Radioaktivität
Calibration laboratory for measurements of radioactivity
AKKREDITIERT DURCH DIE PHYSIKALISCH-TECHNISCHE BUNDESANSTALT (PTB)

Amersham Buchler GmbH & Co KG
Postfach 11 49 Gieselweg 1
D-38001 Braunschweig D-38110 Braunschweig

Telefon (05307) 930-0
Telefax (05307) 930-293
Telefax-Zentrale 930-237

02628
DKD-K-06501
95-10

Kalibrierschein
Calibration Certificate

Kalibrierzeichen
Calibration mark

Gegenstand *Object*	Radioactive Reference Solution
Hersteller *Manufacturer*	Amersham Buchler GmbH & Co KG Postfach 11 49 Gieselweg 1 D-38001 Braunschweig D-38110 Braunschweig
Typ *Type*	RBZB44
Strahler-Nr. *Source number*	ET 491
Auftraggeber *Customer*	Amersham Corporation 2636 S. Clearbrook Drive Arlington Heights, IL 60005 USA-Arlington Heights, IL
Auftragsnummer *Work order number*	112116
Anzahl der Seiten des Kalibrierscheines *Number of pages of the certificate*	2
Referenzdatum *Reference date*	1 January 1995

Der Deutsche Kalibrierdienst ist Unterzeichner des multilateralen Übereinkommens der Western European Calibration Cooperation (WECC) zur gegenseitigen Anerkennung der Kalibrierscheine.
Die Kalibrierung erfolgt auf der Grundlage des zwischen der Physikalisch-Technischen Bundesanstalt und dem Träger abgeschlossenen Vertrages.
Dieser Kalibrierschein dokumentiert die Rückführbarkeit auf nationale Normale zur Darstellung der physikalischen Einheiten in Übereinstimmung mit dem Internationalen Einheitensystem (SI).
Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.
The Deutscher Kalibrierdienst is signatory to the multilateral agreement of the Western European Calibration Cooperation (WECC) for the mutual recognition of calibration certificates.
The calibration is performed according to the stipulations of the contract between the Physikalisch-Technische Bundesanstalt and the holder of the calibration laboratory.
This calibration certificate documents the traceability to national standards, which realize the physical units of measurement according to the International System of Units (SI).
The user is obliged to have the object recalibrated at appropriate intervals.

Stempel Seal	Datum Date	Leiter des Kalibrierlaboratoriums Head of the calibration laboratory	Stellvertreter Deputy	Bearbeiter Person responsible
Deutscher DKD-K- 06501 Kalibrierdienst	18 October 1995	Dr. Dornhöfer	Dr. Thieme	E. Schuler

RC-5-013-4

Amersham

Radioactive Reference Solution

Solution No.:	ET 491
Drawing No.:	VZ-2058
Nuclide:	Lead-210
Radioactive concentration:	38.1 kBq/g
Reference date:	1 January 1995 at 12.00 GMT
Mass of solution:	(5.182 ± 0.001) g
Volume of solution:	approx. 5 ml
Chemical composition:	Solution in 1.2 M HNO3 Carrier: Pb (NO3)2, Bi (NO3)3; each 20 mg/l of the corresponding element.
Measuring method:	The activity was determined by comparision with a reference solution by measurement with a Ge-detector with MCA.
Traceability:	Additional to the direct traceability to the PTB through the DKD this product satisfies the quality assurance requirements of USNRC Regulatory Guide 4.15 Revision 1, February 1979, for achieving NIST traceability through Amersham's participation in the NEI-NIST Measurements Assurance Program of the Nuclear Power Industry.
Uncertainty:	The relative uncertainty of the activity is ± 3 %. The declared uncertainty U is an expanded uncertainty $U = k * u_c$ with a coverage factor of $k = 3$. The combined uncertainty u_c is the sum of all uncertainties which can be evaluated by statistical means (uncertainty type A, u_A) and all other uncertainties (uncertainty type B, u_B) whereby $u_c^2 = u_A^2 + u_B^2$. (Ref.: NIST Technical Note 1297 / WECC-Doc. 19-1990)
Radioactive impurities:	Related to Pb-210 (equal 100 %) the following radioactive impurities were detected: Ra-226: 0.003 %

Deutscher DKD-K-06501 Kalibrierdienst

RC-5-013-47

Amersham
The Health Science Group

Amersham Corporation
2636 S. Clearbrook Drive
Arlington Heights, IL 60005
tel (708) 593-6300
fax (708) 593-8091

Amersham

TRACEABILITY TO NIST

Traceability is the ability to relate the accuracy of measurement of radionuclides to the National Institute of Standards and Technology (NIST). Traceability is achieved by participation in a Measurements Assurance Program linked to NIST and production of certified materials in accordance with a quality assurance program.

Amersham participates in measurement assurance programs conducted by NIST in cooperation with the Nuclear Energy Institute (NEI, formerly USCEA). Additionally, our production facilities and measurement laboratories operate under routinely audited quality assurance programs.

Therefore, Amersham certified standardized products meet or exceed, the NRC requirements for measurements traceable to NIST.

278004C

RC-5-013-4B

Standard Traceability Log Rad

Source Material Info	
Parent Code:	ET491
Prepared By:	Garret Ray
Carrier Conc:	1.2M HNO3
Reference Date:	01/01/1995
Ampoule Mass (g):	5.182 g
Uncertainty:	+/- 3 %
LogBook No:	RC S 014 004

A Solution Material Info	
Isotope:	Lead-210
Prepared By:	Garret Ray
Prep Date:	03/01/1996
Verification Date:	07/12/2005
Expiration Date:	07/12/2006
Primary Code:	ET491-A
Dilution(mL):	100 mL
Mass of Parent(g):	5.0547 g
Density(g/mL):	1.0000

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (kBq/g)) * (conversion dpm to kBq) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (kBq/g)) * (conversion dpm to kBq) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(5.0547 g) * (38.1 kBq/g) * (60000 dpm/kBq) / (100 mL) = 115550.4420 dpm/mL
(5.0547 g) * (38.1 kBq/g) * (60000 dpm/kBq) / (1.0000 g/mL) / (100 mL) = 115550.4420 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
10/20/1997	Richard Kinney	.467	100	ET491-B	524.45 dpm/ml	03/01/1997	03/01/1998
10/29/1997	Richard Kinney	3.0992	500	ET491-C	696.09 dpm/mL	10/29/1998	10/29/1999
04/03/2001	Angela Johnson	.5184	100	ET491-D	582.17 dpm/mL	04/16/2003	04/16/2004
09/15/2003	Angela Johnson	.5132	100	ET491-E	576.33 dpm/mL	11/11/2005	11/11/2006

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

Verification for Pb-210 Standard ET491-E

A. Fehr
11/11/2005

	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff	Standard Mass. Used (mL)	Source DPM/mL
	ET491-E N1	1098.1000	21.6000	1098.1000	2.63365	1.0000	416.9502415
	ET491-E N2	1124.3000	21.6000	1124.3000	2.63365	1.0000	426.8984214
	ET491-E N3	1105.2000	21.6000	1105.2000	2.63365	1.0000	419.6461223
						Average =	421.1649284
Mean Value (Counting) =	421.1649284		**102.491173**	**% of known**			
Stdev =	5.145060708		0.01221626				
Certificate Value =	410.9						
Lower Limit =	410.874807						
Upper Limit =	431.4550498						
Rule 1 Pass/Fail	**Pass**	**Pass**	**Pass**				
Two sigma =	10.29012142						
10 % of Mean =	42.11649284						
Rule 2 (Pass/Fail)	**Pass**						

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

The analyst prepared three calibration sources for source ET491-E by transferring 1.0 mL portions of the standard to glass liquid scintillation vials. Ten mL of Ready Gel liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 1 mL of DI water and 10 mL of Ready Gel cocktail. The calibration vials and background source were dark adapted for two hours and counted on LSC Yellow (Wallac) using Protocol 31 for Pb-210 standard verification. The efficiency calibration which was used for verification calculations was performed on 4/19/04 using source 0356-A (Pb-210). Each verification source calculation was performed as follows:

Source dpm/g = (A - B)/(C)(D)
where:
A = Ver. source cpm,
B = BKG cpm,
C = System efficiency, (cpm/dpm), and
D = mass used for standard verification.
Reference RAD SOP M-001

Amanda L. Fehr 11/11/05

ANALYTICS

0688

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 • U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

68509-278

U-232 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using an aliquot measured gravimetrically from a master radionuclide solution standard. The master radionuclide solution standard was calibrated by the Department Des Applications Et De La Metrologie Des Rayonnements Ionisants (DAMRI), Paris, France, as Number 23236.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	U-232
ACTIVITY (dps):	3.779 E3
CALIBRATION DATE:	June 18, 2004 12:00 EST
HALF-LIFE:	68.9 years
RELATIVE EXPANDED UNCERTAINTY (k=2):	3.3%

Impurities: Am-241 <0.15%
U-233 <0.3%

RECEIVED
Tin Laboratory

5.20343 grams 1M HNO_3 solution.

P O NUMBER 3243 RD, Item 1

SOURCE PREPARED BY: M. Dimitrova
M. Dimitrova, Radiochemist

Q A APPROVED: 6/23/04

RC-S-037-081

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0688
Prepared By:	Amanda Fehr
Carrier Conc:	1M HNO3
Reference Date:	06/18/2004
Ampoule Mass (g):	5.20343 g
Uncertainty:	+/- 3.3 %
LogBook No:	RC-S-037-087

A Solution Material Info	
Isotope:	Uranium-232
Prepared By:	Amanda Fehr
Prep Date:	06/25/2004
Verification Date:	01/12/2006
Expiration Date:	01/12/2007
Primary Code:	0688-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.9894 g
Density(g/mL):	1.0276

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (dps)) * (conversion dpm to dps) / (Ampoule Mass(g) *(Dilution Vol)) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (dps)) * (conversion dpm to dps) / Density / (Ampoule Mass (g) * (Dilution Vol)) = Parent Activity (dpm/g)
(4.9894 g) * (3779 dps) * (59.9 dpm/dps) / (5.20343 g * 100 mL) = 2170.5126 dpm/mL
(4.9894 g) * (3779 dps) * (59.9 dpm/dps) / (1.0276 g/mL)/ (5.20343 g * 100 mL) = 2112.2178 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
06/18/2004	Brenda Burke	2.203	250	0688-B	18.6439 g/mL	06/28/2005	06/28/2006
07/06/2004	Tim Chandler	2.2243	250	0688-C	18.8242 dpm/mL	08/14/2004	08/14/2005
07/06/2004	Amanda Fehr	26.03	1000	0688-D	55.0728 dpm/mL	07/06/2004	07/06/2005
04/19/2005	Amanda Fehr	26.01	1000	0688-E	55.0305 dpm/mL	05/04/2005	05/04/2006
05/27/2005	Brenda Burke	.612	250	0688-F	5.17934 dpm/mL	05/31/2005	05/31/2006
06/23/2005	Brenda Burke	2.227	250	0688-G	18.847 dpm/mL	06/28/2005	06/28/2006
01/06/2006	Mary Avins	26.01	1000	0688-H	55.0305 dpm/mL	01/12/2006	01/12/2007

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

Verification for Uranium-232 Standard *0688-H*

Analyst: M Avins	Isotope	Value		Uncertainty	
Date: 1/12/06	0688-H N1	2.46	pCi/L	0.292	pCi/L
	0688-H N2	2.49	pCi/L	0.383	pCi/L
	0688-H N3	2.48	pCi/L	0.315	pCi/L
Mean Value (Counting) =	2.477	pCi/L		**0.9992767**	**% of known**
Stdev =	0.015275252	pCi/L			
Target =	2.48	pCi/L			
Lower Limit =	2.446116162	pCi/L			
Upper Limit =	2.507217171	pCi/L			
Rule 1 Pass/Fail	**Pass**	**Pass**		**Pass**	
Two sigma =	0.030550505				
10 % of Mean =	0.247666667				
Rule 2 (Pass/Fail)	**Pass**				

The analyst prepared three standard verification sources for standard **0688-H** using 0.1 mL for each source. Each standard was combined with 0.1 mL of **U-238** standard **0858-B** and 50 micrograms of Nd carrier in a disposable centrifuge tube. Each standard was diluted to 4 mL with 2 M HCl, and 2 mL of DI water. One mL of TiCl3 was added. Two mL of 48% HF was added to precipitate Nd(and **Uranium**) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for **U-232** were calculated by comparison to **U-238** certified values.

Reference SOP RAD M-001

Mary L. Avins 1/12/06

Amanda L. Fuhr 1/24/06

National Institute of Standards & Technology

Certificate

Standard Reference Material 4321C
Natural Uranium Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive natural uranium nitrate and nitric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of alpha-particle counting instruments and for the monitoring of radiochemical procedures.

Radiological Hazard

The SRM ampoule contains uranium-238, uranium-235, and uranium-234 with a total activity of approximately 2600 Bq. Uranium decays by alpha-particle emission. The progeny of uranium-238, uranium-235, and uranium-234 have a total activity of approximately 2600 Bq and decay by alpha- and beta-particle emission. None of the alpha or beta particles escape from the SRM ampoule. During the decay process X-rays and gamma rays with energies from 11 keV to 2.0 MeV are also emitted. Most of these photons escape from the SRM ampoule but their intensities are so small that they do not represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]*. The SRM should be used only by persons qualified to handle radioactive material.

Chemical Hazard

The SRM ampoule contains nitric acid (HNO_3) with a concentration of 1 mole per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least August 2007.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899
November 1997

Thomas E. Gills, Chief
Standard Reference Materials Program

*Notes and references are on pages 5 and 6.

Recommended Procedure for Opening the SRM Ampoule

1) If the SRM solution is to be diluted, it is recommended that the diluting solution have a composition comparable to that of the SRM solution.

2) Wear eye protection, gloves, and protective clothing and work over a tray with absorbent paper in it. Work in a fume hood. In addition to the radioactive material, the solution contains strong acid and is corrosive.

3) Shake the ampoule to wet all of the inside surface of the ampoule. Return the ampoule to the upright position.

4) Check that all of the liquid has drained out of the neck of the ampoule. If necessary, gently tap the neck to speed the process.

5) Holding the ampoule upright, score the narrowest part of the neck with a scribe or diamond pencil.

6) Lightly wet the scored line. This reduces the crack propagation velocity and makes for a cleaner break.

7) Hold the ampoule upright with a paper towel, a wiper, or a support jig. Position the scored line away from you. Using a paper towel or wiper to avoid contamination, snap off the top of the ampoule by pressing the narrowest part of the neck away from you while pulling the tip of the ampoule towards you.

8) Transfer the solution from the ampoule using a pycnometer or a pipet with dispenser handle. NEVER PIPETTE BY MOUTH.

9) Seal any unused SRM solution in a flame-sealed glass ampoule, if possible, to minimize the evaporation loss.

See also reference [4]*.

*Notes and references are on pages 5 and 6.

PROPERTIES OF SRM 4321C
(Certified values are shown in bold type)

Source identification number	NIST SRM 4321C		
Physical Properties:			
Source description	Liquid in flame-sealed NIST borosilicate-glass ampoule		
Ampoule specifications	Body outside diameter Wall Thickness Barium content Lead-oxide content Other heavy elements	(16.5 ± 0.5) mm (0.60 ± 0.04) mm Less than 2.5% Less than 0.02% Trace quantities	
Solution density	**(1.053 ± 0.001) g·mL^{-1} at 21.4 °C** [b]*		
Solution mass	**(5.258 ± 0.002) g** [b]		
Chemical Properties:			
Solution composition	Chemical Formula	Concentration (mol·L^{-1})	Mass Fraction (g·g^{-1})
	H_2O HNO_3 $UO_2(NO_3)_2$	53 1.0 0.09	0.91 0.06 0.03
Radiological Properties:			
Radionuclide	**Natural Uranium (Mixture of U-238, U-235, and U-234)**		
Reference time	**1200 EST, 1 August 1997**		
Massic activity of the solution [c]	**U-238: 242.0 Bq·g^{-1}** **U-235: 11.14 Bq·g^{-1}** **U-234: 233.1 Bq·g^{-1}**		
Relative expanded uncertainty (k=2)	**U-238: 0.60%** [d] [e] **U-235: 0.62%** [d] [e] **U-234: 0.98%** [d] [e]		
Mass fraction of uranium	**(0.01960 ± 0.00010) g·g^{-1}** [b]		
Photon-emitting impurities	None detected [f]		
Half lives used	Uranium-238: (4.468 ± 0.003) × 10^9 a [g] Uranium-235: (7.038 ± 0.005) × 10^8 a [g] Uranium-234: (2.455 ± 0.006) × 10^5 a [g]		
Measuring instruments	Mass spectrometer, silicon surface-barrier detector, and $4\pi(\alpha+\beta)$ liquid-scintillation counting systems.		

*Notes and references are on pages 5 and 6.

EVALUATION OF THE UNCERTAINTY OF THE MASSIC ACTIVITY [d]*

Input Quantity x_i, the source of uncertainty (and individual uncertainty components where appropriate)	Method Used To Evaluate $u(x_i)$, the standard uncertainty of x_i (A) denotes evaluation by statistical methods (B) denotes evaluation by other methods	Relative Uncertainty Of Input Quantity, $u(x_i)/x_i$, (%) [h]	Relative Sensitivity Factor, $\lvert\partial y/\partial x_i\rvert \cdot (x_i/y)$ [i]	Relative Uncertainty Of Output Quantity, $u_i(y)/y$, (%) [j]
Isotopic uranium atom fraction in SRM 960	Standard deviation of the mean for repeated mass-spectrometric measurements (A)	U-238: 0.001 U-235: 0.07 U-234: 0.31	1.0 1.0 1.0	0.001 0.07 0.31
Half life	Standard uncertainty of the half life (A)	U-238: 0.07 U-235: 0.07 U-234: 0.25	1.0 1.0 1.0	0.07 0.07 0.25
Uranium mass fraction in SRM 960	Certificate value (B)	0.003	1.0	0.003
Quantitative dissolution	Estimated (B)	0.25	1.0	0.25
Gravimetric measurements	Estimated (B)	0.10	1.0	0.10
Photon-emitting impurities	Limit of detection (B) [k]	100.	0.001	0.10
Relative Combined Standard Uncertainty of the Output Quantity, $u_c(y)/y$, (%)			U-238: U-235: U-234:	0.30 0.31 0.49
Coverage Factor, k				x 2
Relative Expanded Uncertainty of the Output Quantity, U/y, (%)			U-238: U-235: U-234:	0.60 0.62 0.98

*Notes and references are on pages 5 and

NOTES

[a] The Sievert is the SI unit for dose equivalent. See reference [1]. One μSv is equal to 0.1 mrem.

Distance from Ampoule (cm):	1	30	100
Approximate Dose Rate (μSv/h):	<0.1	-	-

[b] The stated uncertainty is two times the standard uncertainty.

[c] **Massic activity** is the preferred name for the quantity activity divided by the total mass of the sample. See reference [1].

[d] The reported value, y, of massic activity (activity per unit mass) at the reference time was not measured directly but was derived from measurements and calculations of other quantities. This can be expressed as $y = f(x_1, x_2, x_3, \ldots x_n)$, where f is a mathematical function derived from the assumed model of the measurement process.

The value, x_i, used for each input quantity i has a **standard uncertainty**, $u(x_i)$, that generates a corresponding uncertainty in y, $u_i(y) \equiv |\partial y/\partial x_i| \cdot u(x_i)$, called a **component of combined standard uncertainty** of y.

The **combined standard uncertainty** of y, $u_c(y)$, is the positive square root of the sum of the squares of the components of combined standard uncertainty.

The combined standard uncertainty is multiplied by a **coverage factor** of $k = 2$ to obtain U, the **expanded uncertainty** of y.

Since it can be assumed that the possible estimated values of the massic activity are approximately normally distributed with approximate standard deviation $u_c(y)$, the unknown value of the massic activity is believed to lie in the interval $y \pm U$ with a level of confidence of approximately 95 percent.

For further information on the expression of uncertainties, see references [2] and [3].

[e] The value of each standard uncertainty component, and hence the value of the expanded uncertainty itself, is a best estimate based upon all available information, but is only approximately known. That is to say, the "uncertainty of the uncertainty" is large and not well known. This is true for uncertainties evaluated by statistical methods (e.g., the relative standard deviation of the standard deviation of the mean for the massic count rate is approximately 50%) and for uncertainties evaluated by other methods (which could easily be over estimated or under estimated by substantial amounts). The unknown value of the expanded uncertainty is believed to lie in the interval $U/2$ to $2U$ (i.e., within a factor of 2 of the estimated value).

[f] Estimated limits of detection for photon-emitting impurities are:
1.4 $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 8 and 59 keV,
1.1 $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 67 and 88 keV,
0.5 $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 102 and 197 keV,
0.3 $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 205 and 762 keV,
0.2 $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 770 and 996 keV, and
0.1 $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 1006 and 1900 keV,
provided that the photons are separated in energy by 4 keV or more from photons emitted in the decay of uranium-238, uranium-235, uranium-234, or their progeny.

[g] The stated uncertainty is the standard uncertainty. See reference [5].

[h] Relative standard uncertainty of the input quantity x_i.

[i] The relative change in the output quantity y divided by the relative change in the input quantity x_i. If $|\partial y/\partial x_i| \cdot (x_i/y) = 1.0$, then a 1% change in x_i results in a 1% change in y. If $|\partial y/\partial x_i| \cdot (x_i/y) = 0.05$, then a 1% change in x_i results in a 0.05% change in y.

[j] Relative component of combined standard uncertainty of output quantity y, rounded to two significant figures or less. The relative component of combined standard uncertainty of y is given by $u_i(y)/y \equiv |\partial y/\partial x_i| \cdot u(x_i)/y = |\partial y/\partial x_i| \cdot (x_i/y) \cdot u(x_i)/x_i$. The numerical values of $u(x_i)/x_i$, $|\partial y/\partial x_i| \cdot (x_i/y)$, and $u_i(y)/y$, all dimensionless quantities, are listed in columns 3, 4, and 5, respectively. Thus, the value in column 5 is equal to the value in column 4 multiplied by the value in column 3. The input quantities are independent, or very nearly so. Hence the covariances are zero or negligible.

[k] The standard uncertainty for each undetected impurity that might reasonably be expected to be present is estimated to be equal to the estimated limit of detection for that impurity, i.e. $u(x_i)/x_i = 100\%$. $|\partial y/\partial x_i| \cdot (x_i/y)$ = {(response per Bq of impurity)/(response per Bq of U-238)}·{(Bq of impurity)/(Bq of U-238)}. Thus $u_i(y)/y$ is the relative change in y if the impurity were present with a massic activity equal to the estimated limit of detection.

REFERENCES

[1] International Organization for Standardization (ISO), *ISO Standards Handbook - Quantities and Units*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900.

[2] International Organization for Standardization (ISO), *Guide to the Expression of Uncertainty in Measurement*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900. (Listed under ISO miscellaneous publications as "ISO Guide to the Expression 1993".)

[3] B. N. Taylor and C. E. Kuyatt, *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results*, NIST Technical Note 1297, 1994. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20407, U.S.A.

[4] National Council on Radiation Protection and Measurements Report No. 58, *A Handbook of Radioactivity Measurements Procedures*, Second Edition, 1985. Available from the National Council on Radiation Protection and Measurements, 7910 Woodmont Avenue, Bethesda, MD 20814 U.S.A.

[5] Evaluated Nuclear Structure Data File (ENSDF), August 1997.

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0858
Prepared By:	Mary Avins
Carrier Conc:	HNO3
Reference Date:	08/01/1997
Ampoule Mass (g):	5.258 g
Uncertainty:	+/- .6 %
LogBook No:	RC-S-041-034

A Solution Material Info	
Isotope:	Uranium-238
Prepared By:	Mary Avins
Prep Date:	11/21/2005
Verification Date:	11/21/2005
Expiration Date:	11/21/2006
Primary Code:	0858-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.972 g
Density(g/mL):	1.0155

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (bq/g)) * (conversion dpm to bq) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (bq/g)) * (conversion dpm to bq) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(4.972 g) * (242 bq/g) * (60 dpm/bq) / (100 mL) = 721.9344 dpm/mL
(4.972 g) * (242 bq/g) * (60 dpm/bq) / (1.0155 g/mL) / (100 mL) = 710.9460 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
11/21/2005	Mary Avins	8.2104	100	0858-B	58.3715 dpm/mL	11/21/2005	11/21/2006

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

ANALYTICS

0781

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Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

70361-278

5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: April 1, 2005 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432	y	3372	4.5
Cd-109	88	462.6	d	4698	3.3
Co-57	122	271.79	d	2450	3.0
Ce-139	166	137.6	d	3496	2.8
Hg-203	279	46.61	d	7565	2.7
Sn-113	392	115.1	d	4711	2.6
Cs-137	662	30.07	y	3109	3.0
Y-88	898	106.6	d	12320	2.6
Co-60	1173	5.2714	y	5769	2.7
Co-60	1332	5.2714	y	5830	2.6
Y-88	1836	106.6	d	12860	2.6

5.32720 grams 4M HCl solution.
P O NUMBER 2704RD, Item 1

SOURCE PREPARED BY: M Taskaeva
M. Taskaeva, Radiochemist

Q A APPROVED: 04-11-2005

This standard will expire one year after the calibration date.

U.S. DEPARTMENT OF COMMERCE
National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

Analytics, Incorporated
Atlanta, Georgia

is a participant for the period January 1, 2005, through December 31, 2005, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the Nuclear Energy Institute. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed below.*

For the Director,

Michael P. Unterweger, Acting Leader
Radioactivity Group
Physics Laboratory

*As guidance for the proper use of Reports of Traceability, it should be emphasized that the National Institute of Standards and Technology is concerned only with fostering good measurements capability and consistency with the national measurements system. The assurance of the proper application of that capability to the ultimate consumer products is the responsibility of each manufacturer of these products and of the Federal regulatory agencies.

A continuing traceability program in radioactivity demonstrates, to the degree established by the periodic assays of calibrated radioactivity samples, a continuing competence to maintain the methods and standards necessary for accurate measurement. Such a program cannot, however, endorse each and every measurement nor the final product, any more than a spot check can vouch for every unchecked item. Care should be taken, therefore, not to imply such endorsement. The proper use of this Report is governed by section 200.114 of Title 15 of the Code of Federal Regulations. These regulations may be met if Reports are quoted only in their entirety. Excerpts out of context may be misleading.

RC-S-039-065b

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ANALYSIS OF UNCERTAINTY FOR MIXED GAMMA STANDARDS

BATCH 120

CALIBRATION DATE: April 1, 2005 12:00 EST

Isotope	Energy (keV)	Calibration Method[1]	Statistics[2]	Calibration[2]	Peak Fitting[2]	Geometry[2]	Impurities[2]	Weighing[2]	Combined Standard Uncertainty[2]	Relative Expanded Uncertinty[2] (k=2)
Cd-109	88	HPGe	0.16	1.1	0.88	0.8	0	0.2	1.64	3.3
Co-57	122	HPGe	0.23	1.1	0.71	0.7	0	0.2	1.52	3.0
Ce-139	166	HPGe	0.17	1.0	0.58	0.7	0	0.2	1.38	2.8
Hg-203	279	HPGe	0.11	1.1	0.34	0.7	0	0.2	1.37	2.7
Sn-113	392	HPGe	0.21	1.0	0.35	0.7	0	0.2	1.30	2.6
Cs-137	662	HPGe	0.36	1.1	0.60	0.7	0	0.2	1.49	3.0
Y-88	898	HPGe	0.19	1.0	0.33	0.7	0	0.2	1.29	2.6
Co-60	1173	HPGe	0.31	.97	0.45	0.7	0	0.2	1.33	2.7
Co-60	1332	HPGe	0.33	.93	0.48	0.7	0	0.2	1.32	2.6
Y-88	1836	HPGe	0.24	1.0	0.35	0.7	0	0.2	1.31	2.6

Optional Additional Isotopes

Pb-210	46.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Am-241	59.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Sr-85	514	IC	0.30	1.1	0	0.7	0.17	0.2	1.36	2.7
Cs-134	605	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Cs-134	796	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Mn-54	835	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Zn-65	1116	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7

[1]Calibration Methods:

4π LS (4 pi Liquid Scintillation Counting)
HPGe (High Purity Germanium Gamma Ray Spectrometer)
IC (Gamma Ray Ionization Chamber)

[2]As Percent (%)from counting data

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0781
Prepared By:	Amanda Fehr
Carrier Conc:	4M HCL
Reference Date:	04/01/2005
Ampoule Mass (g):	5.3272 g
Uncertainty:	+/- 3 %
LogBook No:	RC-S-039-065

A Solution Material Info	
Isotope:	Mixed Gamma
Prepared By:	Amanda Fehr
Prep Date:	04/26/2005
Verification Date:	04/27/2005
Expiration Date:	04/27/2006
Primary Code:	0781-A
Dilution(mL):	100 mL
Mass of Parent(g):	5.1233 g
Density(g/mL):	5.4962

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (dpm)) * (conversion dpm to dpm) / (Ampoule Mass(g) *(Dilution Vol)) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (dpm)) * (conversion dpm to dpm) / Density / (Ampoule Mass (g) * (Dilution Vol)) = Parent Activity (dpm/g)
(5.1233 g) * (219149.436 dpm) * (1 dpm/dpm) / (5.3272 g * 100 mL) = 2107.6143 dpm/mL
(5.1233 g) * (219149.436 dpm) * (1 dpm/dpm) / (5.4962 g/mL)/ (5.3272 g * 100 mL) = 383.4709 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

Verification for Mixed Gamma Standard 0781-A (AM-241 & Cs-137)

A. Fehr
4/29/2005

Am-241	Isotope	Result		Cs-137	Isotope	Result	
	Mixed Gamma N1	9796			Mixed Gamma N1	3753	
	Mixed Gamma N2	9930			Mixed Gamma N2	4015	
	Mixed Gamma N3	10290			Mixed Gamma N3	3878	
Mean Value (Counting) =	10005.33	**102.47**	**Pass**		3882.00	**102.39**	**Pass**
Stdev =	255.471		**Rule 3 (Pass/Fail)**		131.046		**Rule 3 (Pass/I**
Certificate Value =	9764.6				3791.3		
Lower Limit =	9494.391719				3619.908413		
Upper Limit =	10516.27495				4144.091587		
Rule 1 (Pass/Fail)	**Pass**				**Pass**		
Two sigma =	510.9416144				262.091587		
10 % of Mean =	1000.53333333				388.20000000		
Rule 2 (Pass/Fail)	**Pass**				**Pass**		

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
Rule 3 = The determined mean value shall be within 10% of the certificate value.

Amanda L. Fehr 4/29/05

Angela A. Johnson 5/6/05

Verification for Mixed Gamma Standard 0781-A (Co-60)

A. Fehr 4/29/2005	**Isotope**	**Result** **pCi/L**	
	Mixed Gamma N1	6132	
	Mixed Gamma N2	6073	
	Mixed Gamma N3	6240	
Mean Value (Counting) =	6148.33	pCi/L	**102.365 Pass**
Stdev =	84.690	pCi/L	**Rule 3 (Pass/Fail)**
Certificate Value =	6006.3	pCi/L	
Lower Limit =	5978.954074	pCi/L	
Upper Limit =	6317.712592	pCi/L	
Rule 1 Pass/Fail	**Pass**		
Two sigma =	169.3792589		
10 % of Mean =	614.8333333		
Rule 2 (Pass/Fail)	**Pass**		

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
Rule 3 = The determined mean value shall be within 10% of the certificate value.

Amanda L. Fehr 4/29/05

Angela A. Johnson 5/6/05

0873

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smart solutions®

Certificate of Analysis

Catalog No: 060092-17
Lot No: 1006726
Storage: Ambient
Matrix: 1M HNO_3
Container: 250 ml Narrow Mouth, HDPE
Description: Uranium 500 µg/L ± 0.5% in 1M HNO_3

Quality System
Audited & Registered
by NSF-ISR to ISO 9001:2000

Date Received: 4/19/05
Expiration Date: 6/17/2007

Element	Symbol	CAS No	Source Lot No	Purity %	Concentration ug/L
Uranium Total	U	7440-61-1	7075.42.5	100	500

Certified By: Mark Filla

Mark Filla

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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RCS-041-049

RUNLOGS

Instrument Run Log

ID	Sample Type	Analyst	Instrument	Dil	Run Date	Batch Id	Status	Geometry	Cal Date
158269001	SAMPLE	LCW1	1001		07-APR-2006 18:07	517153	DONE		
158269002	SAMPLE	LCW1	1003		07-APR-2006 18:07	517153	DONE		
158269003	SAMPLE	LCW1	1004		07-APR-2006 18:07	517153	DONE		
158269004	SAMPLE	LCW1	1005		07-APR-2006 18:07	517153	DONE		
158270001	SAMPLE	LCW1	1007		07-APR-2006 18:07	517153	DONE		
158270002	SAMPLE	LCW1	1009		07-APR-2006 18:07	517153	DONE		
158437001	SAMPLE	LCW1	1010		07-APR-2006 18:07	517153	DONE		
158437002	SAMPLE	LCW1	1011		07-APR-2006 18:07	517153	DONE		
158437004	SAMPLE	LCW1	1021		07-APR-2006 18:07	517153	DONE		
158438001	SAMPLE	LCW1	1023		07-APR-2006 18:07	517153	DONE		
158438002	SAMPLE	LCW1	1026		07-APR-2006 18:07	517153	DONE		
158438003	SAMPLE	LCW1	1027		07-APR-2006 18:07	517153	DONE		
158438005	SAMPLE	LCW1	1029		07-APR-2006 18:07	517153	DONE		
1201062927	MB	LCW1	1030		07-APR-2006 18:07	517153	DONE		
1201062928	DUP	LCW1	1032		07-APR-2006 18:07	517153	DONE		
1201062929	MS	LCW1	1034		07-APR-2006 18:07	517153	DONE		
158437003	SAMPLE	LCW1	1016		08-APR-2006 08:46	517153	DONE		
158438004	SAMPLE	LCW1	1017		08-APR-2006 08:46	517153	DONE		
1201062930	LCS	LCW1	1018		08-APR-2006 08:46	517153	DONE		

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Instrument Run Log

ID	Sample Type	Analyst	Instrument	Dil	Run Date	Batch Id	Status	Geometry	Cal Date
158269001	SAMPLE	LCW1	1032		08-APR-2006 15:43	517155	DONE		
158269002	SAMPLE	LCW1	1033		08-APR-2006 15:43	517155	DONE		
158269003	SAMPLE	LCW1	1034		08-APR-2006 15:43	517155	DONE		
158269004	SAMPLE	LCW1	1037		08-APR-2006 15:43	517155	DONE		
158270001	SAMPLE	LCW1	1038		08-APR-2006 15:43	517155	DONE		
158270002	SAMPLE	LCW1	1040		08-APR-2006 15:43	517155	DONE		
158437001	SAMPLE	LCW1	1041		08-APR-2006 15:43	517155	DONE		
158437002	SAMPLE	LCW1	1042		08-APR-2006 15:43	517155	DONE		
158437003	SAMPLE	LCW1	1043		08-APR-2006 15:43	517155	DONE		
158437004	SAMPLE	LCW1	1044		08-APR-2006 15:43	517155	DONE		
158438001	SAMPLE	LCW1	1045		08-APR-2006 15:43	517155	DONE		
158438002	SAMPLE	LCW1	1046		08-APR-2006 15:43	517155	DONE		
158438003	SAMPLE	LCW1	1047		08-APR-2006 15:43	517155	DONE		
158438004	SAMPLE	LCW1	1048		08-APR-2006 15:43	517155	DONE		
158438005	SAMPLE	LCW1	1077		08-APR-2006 15:43	517155	DONE		
1201062931	MB	LCW1	1078		08-APR-2006 15:43	517155	DONE		
1201062932	DUP	LCW1	1079		08-APR-2006 15:43	517155	DONE		
1201062933	MS	LCW1	1080		08-APR-2006 15:43	517155	DONE		
1201062934	LCS	LCW1	1081		08-APR-2006 15:43	517155	DONE		

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Instrument Run Log

ID	Sample Type	Analyst	Instrument	Dil	Run Date	Batch Id	Status	Geometry	Cal Date
158437001	SAMPLE	MJH1	GAM14		13-APR-2006 16:50	513807	DONE	CAN	22-FEB-2006
158437002	SAMPLE	MJH1	GAM19		13-APR-2006 16:53	513807	DONE	CAN	22-FEB-2006
1201055622	LCS	MJH1	WELL		13-APR-2006 18:53	513807	DONE	CAN	29-DEC-2005
158437003	SAMPLE	MJH1	GAM14		13-APR-2006 21:46	513807	DONE	CAN	22-FEB-2006
158437004	SAMPLE	MJH1	GAM19		13-APR-2006 21:47	513807	DONE	CAN	22-FEB-2006
158438001	SAMPLE	MJH1	GAM14		14-APR-2006 06:26	513807	DONE	CAN	22-FEB-2006
158438003	SAMPLE	MJH1	GAMMA17		14-APR-2006 06:27	513807	DONE	CAN	04-JAN-2006
158438004	SAMPLE	MJH1	GAMMA16		14-APR-2006 06:27	513807	DONE	CAN	22-MAR-2006
158438002	SAMPLE	MJH1	GAM19		14-APR-2006 06:28	513807	DONE	CAN	22-FEB-2006
158438005	SAMPLE	MJH1	HP		14-APR-2006 06:28	513807	DONE	CAN	01-FEB-2006
1201055620	MB	MJH1	GAMMA9		14-APR-2006 06:29	513807	DONE	CAN	08-JUL-2005
1201055621	DUP	MJH1	GAMMA16		14-APR-2006 08:48	513807	DONE	CAN	22-MAR-2006

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Instrument Run Log

ID	Sample Type	Analyst	Instrument	Dil	Run Date	Batch Id	Status	Geometry	Cal Date
158270001	SAMPLE	BXF1	PIC2D		11-APR-2006 11:44	517518	DONE	Tuffryn Filter	29-JUL-2005
158270002	SAMPLE	BXF1	PIC3B		11-APR-2006 11:44	517518	DONE	Tuffryn Filter	29-JUL-2005
158437001	SAMPLE	BXF1	PIC3C		11-APR-2006 11:44	517518	DONE	Tuffryn Filter	29-JUL-2005
158437002	SAMPLE	BXF1	PIC3D		11-APR-2006 11:44	517518	DONE	Tuffryn Filter	29-JUL-2005
158437003	SAMPLE	BXF1	PIC4A		11-APR-2006 11:44	517518	DONE	Tuffryn Filter	29-JUL-2005
158437004	SAMPLE	BXF1	PIC4B		11-APR-2006 11:44	517518	DONE	Tuffryn Filter	29-JUL-2005
158438001	SAMPLE	BXF1	PIC4C		11-APR-2006 11:44	517518	DONE	Tuffryn Filter	29-JUL-2005
158438002	SAMPLE	BXF1	PIC4D		11-APR-2006 11:44	517518	DONE	Tuffryn Filter	29-JUL-2005
1201063770	MB	BXF1	PIC4A		11-APR-2006 12:48	517518	DONE	Tuffryn Filter	29-JUL-2005
1201063771	DUP	BXF1	PIC4B		11-APR-2006 12:49	517518	DONE	Tuffryn Filter	29-JUL-2005
1201063772	MS	BXF1	PIC4C		11-APR-2006 12:49	517518	DONE	Tuffryn Filter	29-JUL-2005
1201063773	LCS	BXF1	PIC4D		11-APR-2006 12:49	517518	DONE	Tuffryn Filter	29-JUL-2005
158438003	SAMPLE	BXF1	PIC3B		11-APR-2006 12:49	517518	DONE	Tuffryn Filter	29-JUL-2005
158438004	SAMPLE	BXF1	PIC3C		11-APR-2006 12:49	517518	DONE	Tuffryn Filter	29-JUL-2005
158438005	SAMPLE	BXF1	PIC3D		11-APR-2006 12:49	517518	DONE	Tuffryn Filter	29-JUL-2005

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Instrument Run Log

ID	Sample Type	Analyst	Instrument	Dil	Run Date	Batch Id	Status	Geometry	Cal Date
158269001	SAMPLE	DRS1	KPA11AUTO1		19-APR-2006 10:06	521637	DONE		
158269002	SAMPLE	DRS1	KPA11AUTO1		19-APR-2006 10:08	521637	DONE		
158269003	SAMPLE	DRS1	KPA11AUTO1		19-APR-2006 10:10	521637	DONE		
158269004	SAMPLE	DRS1	KPA11AUTO1		19-APR-2006 10:12	521637	DONE		
158270001	SAMPLE	DRS1	KPA11AUTO1		19-APR-2006 10:14	521637	DONE		
158270002	SAMPLE	DRS1	KPA11AUTO1		19-APR-2006 10:16	521637	DONE		
158437001	SAMPLE	DRS1	KPA11AUTO1		19-APR-2006 10:18	521637	DONE		
158437002	SAMPLE	DRS1	KPA11AUTO1		19-APR-2006 10:21	521637	DONE		
158437003	SAMPLE	DRS1	KPA11AUTO1		19-APR-2006 10:23	521637	DONE		
158438003	SAMPLE	DRS1	KPA11AUTO1		19-APR-2006 10:31	521637	DONE		
158438004	SAMPLE	DRS1	KPA11AUTO1		19-APR-2006 10:33	521637	DONE		
1201073174	MB	DRS1	KPA11AUTO1		19-APR-2006 10:37	521637	DONE		
1201073177	LCS	DRS1	KPA11AUTO1		19-APR-2006 10:46	521637	DONE		
1201073178	LCSD	DRS1	KPA11AUTO1		19-APR-2006 10:48	521637	DONE		
158437004	SAMPLE	DRS1	KPA11AUTO1		20-APR-2006 15:03	521637	DONE		
158438001	SAMPLE	DRS1	KPA11AUTO1		20-APR-2006 15:06	521637	DONE		
158438002	SAMPLE	DRS1	KPA11AUTO1		20-APR-2006 15:08	521637	DONE		
158438005	SAMPLE	DRS1	KPA11AUTO1		20-APR-2006 15:11	521637	DONE		
1201073175	DUP	DRS1	KPA11AUTO1		20-APR-2006 15:13	521637	DONE		
1201073176	MS	DRS1	KPA11AUTO1		20-APR-2006 15:15	521637	DONE		

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